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THE DUBLIN JOURNAL OF MEDICAL SCIENCE.

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PART I.

ORIGINAL COMMUNICATIONS.

Art. I.—*Operative Methods, New and Old, in Tuberculosis of the Knee-joint.*[a] By Sir William Thomson, C.B., F.R.C.S.; Surgeon to the Richmond Hospital, Dublin; Hon. Surgeon to the King in Ireland.

Mr. President and Gentlemen, I have to thank the Committee of this Society for the honour they have done me in inviting me to address you at this opening meeting of your Session. I feel that you have paid a flattering courtesy not only to myself but to the country from which I come, and I wish most cordially to acknowledge it.

When I first put to myself the question—"What shall be the subject of my Address," it occurred to me that I might find you sated with the whole range of problems in what I may call the transcendental surgery of to-day's fashion, and that you might for a change be inclined to go with me along some paths more prosaic, but not less interesting and important. So, discussing the matter in my mind, I came at last to the decision to ask you to consider with me the treatment of tuberculosis of the knee-joint. I think you will admit that it is not in a quite satisfactory position, and the variety of methods points to the fact that there is great difference in the views of surgeons as to what is best to be done. The disease is common enough, but if it is common, it is not commonplace. It influences severely the life-history of the poor, among whom almost every individual must be a breadwinner: it mars many a career, which otherwise might be so successful, among those with the best social surroundings. It is, then, of great importance among the things that form the activities of a surgeon's life; and in dealing with it he may worthily exercise his best qualities, for not only does it demand high powers of brain and hand, but it will test his skill and patience to the utmost. And to my younger *confrères* may I say that they will meet tubercular arthritis far more frequently than abdominal mysteries, with all their fascinating perplexities? So it seems to me that I am justified in trying to lay before you shortly the claims of competing methods, and to arrive at a fair appreciation of them.

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[a] Being an Address delivered before the Midland Medical Society at Birmingham, on October 27, 1904.

I start with the admission that by far the greater number of cases, if seen early, are amenable to a certain degree to treatment by mechanical methods. Some appliance, such as Thomas's splint, which gives rest to the joint, and enables the patient to take exercise in the open air, supplemented by generous constitutional treatment, will frequently stay the progress of the disease, and leave the patient with a joint which may be damaged, but useful. It is for this reason that we seldom find it necessary to interfere actively with children of the better class. The watchful care which they enjoy leads to an early recognition of symptoms, and medical aid is sought. But unhappily that is not so with the children of the poor, whom we see in such numbers in the out-patient departments and hospitals of large towns. Their condition is not recognised by parents who are too often unobservant or neglectful, or their complaints are attributed to some passing strain or to "growing pains." When we see these cases many of them have far advanced on the road which leads not only to permanent damage, but to the imperilling of the joint or limb altogether. What is to be done for them? Our hospitals have too many demands upon their space to give shelter to all these poor creatures. They cannot provide themselves with suitable splints and crutches, for they cost money. So we treat the less urgent of them as extern patients. We put up the limbs in plaster of Paris, and send their owners back to their wretched dwellings—to every hostile condition that we can conceive—bad air, bad food, bad clothing. And with what result? There are some who appear to think that joints will in such circumstances get well in time. I envy them their optimism. In my experience they do not get well. The poor live their uncared-for, happy-go-lucky lives as usual. Perhaps they appear only at long intervals at the out-patient department, or not at all. But very surely the trouble goes on, and in the end, sooner or later, they come to us with a joint whose treatment has passed out of the region of simpler non-operative remedies, with greatly thickened synovial membrane, often with sinuses, sometimes permanently flexed and deformed.

Up to fifty years ago it may be said that all such joints had a uniform fate at the surgeon's hands. The thigh was promptly amputated, if only the patient would consent, and the sufferer was submitted to the risk of a thirty per cent. operative mortality. It came about, however, that limbs as well as life had an increasing value; and there arose among surgeons, influenced by the wonderful development of their art, in response to the lessons of science, a desire to preserve what it had been in the habit to condemn.

But long before this period—in 1782—Park, of Liverpool, had the honour of trying to place the treatment of these cases on a rational basis. He successfully excised the knee-joint, and seven years later he did the operation a second time with a fatal result. Filkin, of Northwich, had, however, anticipated Park by just twenty years, although he modestly withheld publication, and to him belongs the distinction of having performed the first operation of this kind. Up to 1816 only six cases are recorded. Then came a couple of Irish cases operated upon by Sir Philip Crampton. The procedure was one of the surgical curiosities of the time. No British surgeon other than Filkin and Park had ventured upon it, and naturally in Dublin, where Crampton operated in 1823, there was intense excitement in the profession. The theatre of the Meath Hospital was crowded by medical men and students. I have already put on record an account of the proceedings as described in *The Lancet* of 1825, but the story will bear repetition now. The writer says:—"It was the first time, we believe, that the removal of the knee-joint was attempted here. We earnestly hope it will be the last. The operator of course accomplished his purpose with his usual dexterity. But could he have beheld, as we did, the contorted countenances of the spectators, the knife would have fallen from his hand, never to be used where it was not more imperiously indicated. To be present was indeed a torture. One man vented his feelings in a wink, a second in a hem, a third overcame his sympathies in a forced fit of laughter. . . . All to be sure admired, but all disapproved. We saw this poor creature a long time afterwards endeavouring to drag her limb with her by means of sundry wooden contrivances. Let it be called by whatever name the sanguinary desperadoes of the profession choose, we shall never be cheated out of our judgment or fear to expose such practice when it falls under our observation." Ninety-four years after (1856) Filkin's operation, Syme is to be found protesting against "the vehement and persevering efforts which have lately been made to force into fashion two operations (excision of the knee and of the hip) which are bloody and formidable." The denunciation reminds me of the statement of a writer in one of the Scotch Medical Journals, who declared that Mr. Lizars having twice operated for the removal of ovarian tumours and failed to save the patients, he was sure no one else would have the hardihood to repeat the experiment.

But as to knee-joint excision, the experiment was repeated in spite of much hostility. Butcher, in Dublin, and Heron Watson, in Edinburgh, laboured on, and Butcher—although his cases were few compared with present day statistics—did succeed in establishing the operation in his own country. In England, however, the operation has never been a popular one. It takes a long time to overcome the opposition of men of accepted eminence, but in Ireland we have not been so reverent to authority, and the results we have obtained justify our position.

It is a sound principle that we should take the easiest and the simplest road to attain a good result in our treatment. But it must be clear beyond dispute that the plan we adopt is as effective as any rival one in regard to efficiency of the limb, that it has less risk to life, and that it occupies less time in reaching the final stage of success. Experiment in surgery has led us to very remarkable achievements, and it is essential to progress that all legitimate efforts in this line should not be hindered. The motive has been to cure, but I am not satisfied that the expectations which have been time after time excited in this department of surgery have been fulfilled. I have only to point to the variety of plans which have been submitted to the profession during the past few years to justify my view. The serum treatment has been abandoned, and in its place we have had the direct introduction of chemicals into the joint and the diseased synovial membrane.

Lannelongue's injections of chloride of zinc have not justified the claims made for them by that distinguished surgeon. Kolischer has admitted disappointment in the results obtained from his efforts to calcify the tuberculous structures by injecting neutral phosphate of calcium. Arsenious acid, tincture of iodine, and other substances have also had a trial. Iodoform is extensively used in Germany as a germicide. Krause reports twenty-three cures of various diseased joints out of sixty treated. I have had the most satisfactory results from the use of iodoform injections in cases of chronic tuberculous abscess. But this is an entirely different thing from injection into the substance of a greatly thickened tuberculous synovial membrane. Apart from the fact that many of these substances produce great pain, it is to be remembered that the injections must be repeated frequently at long intervals, and that the patient on these occasions has to endure some days of irritative fever, which in itself has a depressing influence on his general condition. Furthermore, the effect of the injection is limited to a small area around the point to which the needle has reached, and it is necessary to visit the already untouched parts at successive operations. At least two dangers seem to attend these proceedings. We can have no assurance that the diseased membrane has in every part been subjected to the claimed curative effects of the injection. If, then, certain portions have not been beneficially affected they still remain as foci from which the disease will progress. The second danger is that outside the sphere of direct influence there must be an area of disturbance which may, and often does, advance to inflammation. In that area there are all the conditions which encourage mischief. In other words, the already diseased tissue in that zone beyond the reach of the germicide is stimulated into increased activity; so, as we should expect, in spite of all aseptic precautions, spots here and there inflame, caseate, and suppurate after the injections, and surely make the last condition worse than the first.

Meanwhile, what of the ligaments of the joint? One of the characteristics of this affection is the persistency and subtlety of the infective process. If we could say that disease is strictly limited to the synovial membrane we should perhaps be encouraged in our efforts. But everyone knows that this is not so. Every ligament in the articulation is tainted or infiltrated. Even the skin gives evidence of it, as we see so often as the result of an incision, in the unhealthy healing granulations that follow. Unless, then, we begin the injections at a very early stage, supposing them to be as potent as is alleged, they are not likely to do good. On the contrary, by their interrupted character and the limited portion of tissue which each can affect, they are more likely to create a false security, while the disease is in truth making dangerous headway.

The opinion of German surgeons is in favour of this method. British surgeons have certainly not accepted it, although occasionally the results may be satisfactory. But the experience in these countries appears to be that it is an unreliable form of treatment, and that disappointment usually follows the practice of it.

But this having been tried and found wanting, we have gone a step further in England. Professor Wright, of Manchester, some twenty years ago, led the way in what was deemed a further advance which would give better results than excision in the case of children. The suggestion that we might remove the disease and at the same time preserve the mobility of the joint is a very attractive one, and there have been many followers of his practice in all parts of the world.

Let us examine this method. It was believed at first that not only could the disease be extirpated, but that a moveable joint could be secured, and that shortening would not follow because the epiphyses were not interfered with. But experience has not found the promises fulfilled. What is the position to-day? It is quite true that movement is preserved in some cases, but the effort to secure it as a routine practice has been abandoned. We know that shortening does take place, as reported in eight of Professor Wright's cases, and that there are other drawbacks which I believe give the operation a secondary position when compared with excision. In erasion the surgeon removes the synovial membrane, say, through two lateral incisions, or one of horse-shoe outline, probably divides the ligaments to secure better access, perhaps takes away the semilunar cartilages, brings the articular surfaces of the tibia and the femur into apposition, fixes the limb, and awaits—not mobility, but rigidity. For, those who are most experienced in this operation do not make attempts at systematic passive movements, because they have learned that they are attended by undesirable results. Now if we want to obtain union which will be solid and reliable, I do not think the best media for securing it are two articular cartilages. Mr. Howard Marsh has emphasised this by declaring that "the practical difficulty is that often no firm synostosis, but only fibrous ankylosis, can be obtained." And he says further—"While the hip, the ankle and the elbow owe their security to the modelling of the articular ends, in the knee this security is entirely dependent on the presence of powerful ligaments. These ligaments, while they connect the bones firmly together, yet allow flexion and extension, sliding and rotation, as well as these movements in constantly varying forms of combination. By arthrectomy not only is the largest of the synovial membranes completely removed, but the ligaments are divided. In fact all the essential components of the joint, except the articular ends themselves, are sacrificed, and the bones are henceforth connected merely by cicatricial tissue. One is almost tempted to remark that if after this a useful joint remains, the original structures would appear to have been a needless arrangement" ("Diseases of the Joints and Spine," pp. 335 and 337.)

There can be no surprise, then, that a joint so treated, which depends for its subsequent stability upon the healing of the divided ligaments and the establishment of fibrous ankylosis, should disappoint our expectations. There being no true osseous union the tendency to flexion is considerable, for the soft structures inevitably yield to the force of the flexor muscles. So serious is this tendency that Mr. Watson Cheyne says that "a back splint should be worn for a long time, sometimes for years" ("Tuberculous Disease of the Bones and Joints," p. 189.) Here the danger is that when the child has passed from direct surgical treatment the deformity may go on increasing, owing to the neglect of the parents, and the patient may return to us with a limb bent almost at right angles demanding excision of the bones.

Now, there is no exaggeration about this picture. Professor Wright stated at the Oxford meeting of the British Medical Association in 1904 that of the 97 cases which he analysed 12 had "slight" flexion and 25 "considerable" flexion—or more than one-third in all. I think I may say that a child with considerable flexion needs a crutch, and although there may be no more active disease, for purposes of progression the patient is in no way improved.

In the second place the procedure has a limited application. That is, it is specially reserved for children in whom the membrane only—or little more—is affected. There can be no objection whatever to adapting our operation to varying developments of disease. We do it every day. But we must be sure as to what the condition is.

Now, I need hardly say that we cannot always be sure that the disease is absolutely confined to the membrane. Opening a knee-joint may reveal entirely unexpected conditions. There may be erosion of cartilages, pus pockets, and caries of the bone ends. Clearly removal of the synovial structure will not suffice. The surgeon must develop his procedure. He must scrape out the caseous foci; he must deal thoroughly with the caries, and gouge out all dead or dying bone. It may be that he must use the saw, and his operation passes into the category of "modified" arthrectomy. When he does this it is difficult to discern the line which divides the proceeding from excision, so far as immediate shock or ultimate mobility of the joint go.

In the third place, let me notice the question of permanent shortening due to interference with the epiphyses in excision. My own experience does not support the allegation that this is one of the results of the radical operation. In the large number of children on whom I have operated, and examined subsequently at various periods, I have not noticed this defect, and I believe it seldom occurs. If a neighbouring lesion has this effect as a necessity upon the epiphysary line, we should see it more frequently than we do. In the violence inflicted near the ends of young bones by fractures—even when there is a separation along the line of the epiphysis—we do not look for a stoppage of development. It may occur, and it is wise to take all chances into consideration in such circumstances, but I hold that we do not look for this as a matter of course. If the epiphysis were always as sensitive as undoubtedly it sometimes is, then we should expect to find this lack of development in many of the modified arthrectomies. For here the bone is entered, and the surgeon does not hesitate to use his gouge freely in clearing out carious masses, even if doing this carries him to the epiphysary line at more than one point. This invasion of a region of great physiological activity may be followed by all the dangers which are held by some to be inherent in the operation of excision. On the other hand, I wish to emphasise the fact that in the thorough operation we do not necessarily encroach upon the growing line at all, and that, therefore, we are not accustomed to see the disastrous shortening which we are told ought to follow.

I have now brought before you what I conceive to be the defects of the methods which I have enumerated, and I have no doubt whatever that all these ways of dealing with tuberculous joints are inferior in all respects to the radical operation of excision. In my own experience the mortality is not one per cent., and is at least as low as that of the simpler operations. The results are certainly better, for having removed the joint and cleared away the infected soft parts, we in the end have a limb which is free of disease—firm, stable, useful. We are not haunted by the perpetual suspicion that some day or other in a joint that we supposed to be saved a destructive outburst may occur. In cases of erasion we are dealing with children who do not realise what are the limits of use of the weakened joint. Some day there is perhaps an overstrain, and the whole trouble is set up again, to follow the weary road of rest and rigid splints, or perhaps to pass on to further palliative operations or to removal of the limb altogether. All these conditions of prolonged liability to mischief which is only quiescent, and of close guardianship against possible movement and accident, are unsatisfactory. We certainly cannot get the protection among the poor—and these children are always running risks which are often realised in failure of the surgeon's efforts.

I have already said that in England excision of the knee does not stand in high favour. The recent textbooks relegate it to a position of secondary importance, and seem to place it in competition with amputation only. One surgeon has declared it to be "a comparatively rare operation." Another says "that the old classical excision is a thing of the past." Well, let me assure you that in Dublin it is not rare, and that it is very much a thing of the present. And this is not because erasion has not been tried, but because experience and judgment have led us to adhere to what we believe to be more satisfactory.

There can be no doubt that at one time excision was a very fatal operation, but so was any procedure which involved opening of the large synovial sac. The revolution in the treatment of wounds affected the results in a remarkable way. Ollier's mortality fell from 80 to 14 per cent. Another group of cases by Meusing shows a reduction from 33 to 5, and later on to 2 per cent.

My personal experience as to mortality is that no major operation could show a much better record. I have lost two cases out of 78 excisions—one after amputation and one from acute mania in a patient who, I then learned, had been in a lunatic asylum. My colleagues—Sir Thornley Stoker and Sir T. Myles—inform me that they have had no deaths. Mr. Tobin, of St. Vincent's Hospital, has just reported 50 cases with one death.

My first excision of the knee dates back just thirty years. It was done within a few weeks of my joining the visiting staff of my hospital. I remember very well the views of my senior colleagues. They had been there for thirty years before that, and some of them seemed to be still under the influence of that terrible *Lancet* picture of the sufferings of an unchloroformed patient. They had also seen in later times some of Butcher's cases, concerning which there were still horrible tales related in the schools and hospitals. They shook their heads deprecatingly, and foretold inevitable disaster. But I was young and full of zeal, and I had the support of my younger colleagues. The excision was done, and the patient recovered. She was able to walk in three months, and many years afterwards I saw her in excellent health—the limb never having given any further trouble. This success gave me encouragement, and from that time I have steadfastly adhered to the operation, because, in my opinion, nothing so good in advanced cases has yet been devised. My patients have ranged in age from four years to forty-seven, and I have, of course, met with all degrees of severity—cases in which only the synovial membrane was engaged, and others in which the bones were severely affected. But I have applied the same remedy always—thorough removal of the diseased parts and of sections from the femur and tibia whether these were infected or not.

Here let me say that I never use Butcher's saw for this purpose. The best instrument is an amputation saw with moveable back. It gives a flat surface, which is not easy to secure with the narrow blade of Butcher's saw.

In the early days I used Heron Watson's splint, but I found that there were two objections to it. As the muscles shrank under the unyielding plaster of Paris casing the patient suffered from jarring of the divided bone ends, and it was difficult to keep the discharges from getting beneath the covering and causing much uncleanness. I then tried a simple hoop iron splint from one and a half to two inches wide, posteriorly extending down from the buttock fold to the foot, bent to receive the heel, and then carried forwards along the sole. In front I used the same material, and fashioned it after the shape of Heron Watson's anterior splint. I found that with little padding this served very well, although I still used plaster of Paris. But the disadvantages of this material persisted, and I determined to rely entirely upon bandages to secure the limb on the splint, and for twenty years I have never used plaster of Paris. Next in our progress, at the Richmond Hospital, was the introduction of dowel-pins by Sir Thornley Stoker. These are used as soon as the cut bone surfaces are placed in position. One pin is passed through on one side and is carried across obliquely into the cut surface of the femur at the opposite side, and pushed into the bone for one and a half inches or more until it meets compact tissue. Another is introduced in the same way from the other side of the tibia and also pushed obliquely into the femur. The two pins thus cross each other and the result is perfect fixity, so that the leg can be lifted from the table by the foot as one rigid piece. This great advance, in conjunction with the light hoop iron splint, removed our difficulty in the painful movement of the bones, and enabled us to dress the wound with great facility. In bed the leg is swung from a strong cradle, and so easy and secure is the whole limb that a patient is able to sit up against a bed-rest, or even without a back support, on the third day.

It is absolutely essential that every visible portion of diseased soft tissue shall be removed, and this is particularly the case in reference to the long pouch under the quadriceps tendon. This must be carefully dealt with. Further, I always make a two-inch longitudinal incision through it, including the skin, so as to give direct exit to any oozing. The main wound, made as dry as possible, having been thoroughly swabbed with pure carbolic acid and then washed out with absolute alcohol, is drained on either side by openings carried through to the popliteal surface, and the tubes are removed in 48 hours. Esmarch's bandage is no longer employed.

In three or four weeks the pins, which project from the points of insertion about two inches, are withdrawn without any pain. The bony surfaces are now well advanced in their adhesion; the limb is firm, and complete osseous union is assured. At the present moment there is a case in Sir Thornley Stoker's ward which in four weeks has needed one dressing, and has firm bone union. I have another such case.

But all do not run so smooth a course as the weeks go by. Remember that, as elsewhere, we see these patients when usually the disease is well advanced, and they are driven by pain, or discharging sinuses, or lameness due to flexion, to seek relief. The membrane is very thick; often there are points of caseation and suppuration; the bone is diseased, and the capsule and other ligaments are infected. Then there may follow the formation of sinuses. But these we attack early and vigorously, time after time if necessary, until at last we have the satisfaction of sending our patient out with a saved limb.

I may be asked where I draw the line between excision and amputation? Well, I say that in every knee case which is fit only for radical operation the question that presents itself first to my mind is—"Is this a case for excision?" I have not done ten amputations of the thigh for diseased knee-joint. Unless amputation is quite obviously indicated I begin with an excision exploration, always with permission to amputate if I find it necessary. But I wish to say that cases that I thought the most unpromising have turned out in the end quite satisfactory.

Twice only I have amputated in the early days for failure of union.

I have always felt, even in the worst cases, that it was fair to give the patient the chance of a sound limb, no matter what the trouble. In subsequent treatment one can always easily take off a leg, but no wooden substitute can effectually take the place of a support of bone and muscle, even although we shorten and stiffen it.

This matter of shortening seems to me to have weighed quite unduly against the operation. There are two kinds—that which follows of necessity from the removal of portions of bone, and that which is the result of premature ossification of the epiphyses. This last can only occur in children; and I am inclined to think that in practice it is met with far less frequently than the books would lead us to expect. In the case of the child we may find that the disease has not yet deeply implicated the bones. Then the surgeon's purpose is to limit his bone incisions in such a way as to provide flat surfaces which will lie easily against each other, and become united in a few weeks. In such circumstances the epiphysary lines can be avoided, and the dreaded secondary shortening does not necessarily follow. When it does it can always be dealt with by some simple appliance. Some primary shortening there must be, the result of the removal of bone, but we must not forget that it is more easy to walk with such a leg than one in which erasion has produced ankylosis, but has had no effect on the activity of the epiphyses. Therefore, I cannot admit that the advocates of erasion as opposed to excision have a good case, when, the knee being stiffened, they claim a special advantage in the absence of any shortening.

But more serious is the exaggerated flexion which undoubtedly used to occur occasionally in the earlier cases of excision in children, when the patients had passed out of surgical care for long periods. I am glad to say that I have not seen such a case for many years. The reason is that I invariably apply a well-made poroplastic splint when the patient is allowed to move about. The splint is moulded closely to the limb so as to encase it, and extends from an inch below the trochanter to two inches above the malleoli. This should be worn for a year, and it can then be removed with safety. I believe that it might be taken off in a few months, but many of these patients are from distant country parts, and cannot be seen regularly. Let me add that the plaster of Paris is inadvisable then as a support. It is heavier and does not last so long, and when it cracks it loses its efficacy and is apt to be removed and not replaced.

In these remarks I have endeavoured to put before you the claims of the two important methods of treating advanced cases of tuberculosis of the knee-joint. I am an advocate of all legitimate enterprise in surgery, for it is from such action that all our great developments have sprung. But after a sufficient trial of new plans it is wise to consider whether all round the older method is worse or better. I think it is better. It enables us to remove disease in soft and hard parts, and to reach at once what might not otherwise be discovered. It gives us speedily a usable leg, safe from any serious recurrence or flexion. On the other side we have a long precarious period after erasion in which union is fibrous, and flexion, often to a considerable degree, is fairly common and always a danger.

To sum up in a few words. Excision is definite, comparatively short in treatment, very free from serious after-complications, and quickly restores a patient to active life. Erasion is not definite, after-treatment is long, complications are always imminent and frequently develop, the patient is not speedily restored to active life, and, lastly, when the surgeon ceases to look for a moveable joint the whole position is surrendered to excision.

I must thank you for the patient hearing which you have extended to me. It is a pleasure to me to be here, and especially not far from the towns in which these two great innovations in surgery have first seen the light. And if I have come to the conclusion that, after all, Park and Filkin's method is the best, as practised to-day, and am able to tell you the story of the success of their imitators in Dublin, let me also pay sincere tribute to the ingenuity and enlightened skill of Mr. Wright, who, in the treatment of joint disease, has done so much to maintain the reputation of English surgery.

ART. II.—*Accidental Hæmorrhage.*[a] By SIR ARTHUR VERNON MACAN, Ex-President, Royal College of Physicians of Ireland.

MY first duty and pleasure is to thank your Council for the honour they have done me in asking me to introduce the discussion on the treatment of accidental hæmorrhage here to-day.

It is now just twenty-five years since a similar honour was done me, when I read a paper on "Hæmorrhage from the Organs of Generation during Pregnancy and Parturition" at the meeting of this Association held in Cork in the year 1879.

When asked to introduce the discussion on accidental hæmorrhage at this meeting I hastily concluded that it would be a much easier task than my former one, as the subject covered an area so much more restricted. In that expectation I have been grievously disappointed, and I have been at times almost in despair of bringing my labours to anything like a satisfactory conclusion. Nor is it likely that any definite conclusion will be arrived at to-day, but we may, I think, hope that the discussion will at least clear the atmosphere and make it evident what questions still remain unanswered and what problems still require to be solved in order to enable us to give a satisfactory answer to the question, What is the best treatment of accidental hæmorrhage?

At the very outset I would like to express my indebtedness, while investigating this subject, to an elaborate paper by Dr W. R. W. Holmes,[b] and to a thoughtful and hardly less important one by Dr. W. F. Colclough,[c] who was Extern Maternity Assistant in the Rotunda Hospital, under the late Master of the Hospital, Dr. Purefoy, which may be found in the *Journal of Obstetrics and Gynæcology of the British Empire* for August, 1902.

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[a] Read before the Section of Obstetrics and Gynæcology at the Oxford Meeting of the British Medical Association, July, 1904.

[b] Ablatio Placentæ. American Journal of Obstetrics. Vol. XLIV.

[c] The Treatment of Accidental Hæmorrhage.

There is at the present time no question in the whole range of obstetrics, not even that of the origin and treatment of eclampsia, about which such opposite views are held as the one that has been fixed on by your Council for our discussion here to-day—namely, the Treatment of Accidental Hæmorrhage. This is true not only in regard to the more serious and unusual forms of treatment, such as the Cæsarean section and *accouchement forcé*, but of the simplest and most generally adopted, such as rupture of the membranes or plugging the vagina. To account for this there must, I think, be some corresponding difference in the views held as to the origin or mechanism of the hæmorrhage, or perhaps some unrecognised difficulty in the diagnosis, or it may be that the different methods of treatment are not applied under any fixed rule, but more by haphazard, and so are used in cases to which they are not suitable. Finally, there is the supposition that applies equally to all cases where there is a great difference of opinion as to several forms of treatment—namely, that none of the methods is very effective, and that a really satisfactory form of treatment has not yet been found out.

This is the conclusion at which Dr. Holmes has arrived, for he acknowledges that he has failed to ascertain "the indications for more accurately placing the lines of treatment;"[a] and where he has failed it would be rash in me to look for success. At the same time I do not hesitate to express my opinion thus early that in systematic plugging of the vagina, combined with the application of a firm binder and perineal bandage, we have an efficient method of treating all cases of accidental hæmorrhage except the most violent ones, and perhaps even these.

I purpose, therefore, before passing on to the treatment, to make a few observations and to offer a few suggestions on the (1) Ætiology, (2) Mechanism, and (3) Diagnosis of Accidental Hæmorrhage.

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[a] Loc. cit. P. 771.

Ætiology.

The causes of accidental hæmorrhage may be divided into three classes:—

1. Those due to accident.
2. Those due to disease.
3. Those due to some failure in the mechanism of labour.

It is hard to determine from our present statistics the relative frequency of these three classes, but the tendency of all modern views is that in the great majority of cases accidental hæmorrhage is due to disease and not to accident. Naturally the diseases on which it most frequently depends are those of the decidua or placenta, while disease of the uterine wall, if not a direct cause, enormously increases the danger of the hæmorrhage, as does any disease of the blood itself, such as scurvy or hæmophilia.

I have no intention of going through the list of all the accidents and diseases that may cause accidental hæmorrhage; but it is probable that most of the diseases act either by weakening the vessels of the placental site or by increasing the tension in them, while it is obvious that an accident will more easily cause rupture of these vessels if they are already the seat of disease. Diseases of the blood itself may not only cause a weakening of the vessels, but may make any rupture much more serious by lessening the coagulability of the blood, while disease of the uterine wall allows a dangerous amount of hæmorrhage to accumulate in the uterus, prolongs the period of the hæmorrhage indefinitely, and, even when the child is born, will probably endanger the patient's life from *post-partum* hæmorrhage, only to be stopped by plugging the uterus, or perhaps by its removal by Porro's operation.

The third class, those due to some failure in the mechanism of labour are: (1) Where the bag of membranes persists far into the second stage, and, by pulling on the placenta, causes its separation; (2) where, during difficult labour, the contraction ring mounts very high in the abdomen, and the placental site becomes so diminished in size that the placenta becomes separated; this is particularly likely to happen in case of neglected transverse presentation when all the waters have drained off, and so lessened the pressure on the fœtal surface of the placenta: (3) if the cord is very short, or twisted round the child's neck, it may, as the child descends, pull on the placenta and separate it; (4) in breech cases, where there is delay in the delivery of the head, the placental site may become so small as to lead to separation of the placenta; (5) and lastly, we have the separation of the placenta that sometimes follows the birth of the first of twins, or the sudden escape of excessive liquor amnii, which the late Professor Schroeder thought were frequent causes of accidental hæmorrhage. In these cases the separation is evidently due both to the diminution in the site of the placenta and to the removal of intrauterine pressure from its fœtal surface.

The Mechanism of Accidental Hæmorrhage.

Before passing on to consider the mechanism of accidental hæmorrhage, there are certain postulates that I would wish to lay down as beyond dispute; these are:—

1. That the healthy uterus cannot be distended to any considerable extent by the force of the blood-pressure.
2. That the placenta has great power of accommodating itself to changes in the size of its site.
3. That the placenta is not so easily separated as the membranes, and that they are both equally separable over their entire area.
4. That the effect of gravity, and of the peristaltic action of the uterus, need not be considered.
5. That the hæmorrhage in spreading will follow the line of least resistance.

These being granted, there are five important questions as to the mechanism of accidental hæmorrhage.

I. What is the mechanical cause of the hæmorrhage?

II. What are the conditions that tend to arrest the hæmorrhage?

III. What are the conditions that tend to its increase and spreading?

IV. What are the conditions that cause the hæmorrhage to remain internal?

V. What are the conditions that cause it to become external?

I. The mechanical causes of the hæmorrhage are:—

1. Increased action of the heart.
2. Obstruction to the escape of venous blood from the uterus.
3. Disease of the vessels.
4. Sudden lessening of the intrauterine tension.
5. Diminution in the size of the placenta site.

II. The conditions that tend to stop the hæmorrhage are:—

1. Weakening of the heart's action.
2. Increased resistance to the escape of the blood from the open vessels, from increase of the intrauterine tension due to—
    - (*a*) The blood that has been diffused;
    - (*b*) Uterine contraction;
    - (*c*) Adhesions round the effused blood.
3. The formation of thrombi.

III. The conditions that tend to the increase of the hæmorrhage are:—

1. Increase of the *vis à tergo,* increased action of the heart.
2. Diminished intrauterine tension, from—
    - (*a*) Giving way of the uterine walls;
    - (*b*) The absence of contractions;
    - (*c*) The hæmorrhage escaping from under the placenta;
    - (*d*) The hæmorrhage becoming external;
    - (*e*) The rupture of the membranes.
3. Fresh separation of the placenta.
4. Diminished coagulability of the blood, as in scurvy and hæmophilia.
5. A rapid flow of the blood preventing the formation of thrombi.
6. The absence of firm adhesions between the placenta and membranes and the uterine walls.

IV. The conditions that cause the hæmorrhage to remain internal are:—

1. Its small amount.

2. The position of the first hæmorrhage—that is, its distance from the edge of the placenta and from the inner os.
3. The presence of firm adhesions between the placenta or membranes and wall of the uterus.
4. Distensibility of the uterine wall.
5. The bleeding bursting into the sac of the amnion.
6. Conglutination of os uteri (Holmes).
7. The retention of the blood by the presenting part.

V. On the other hand, the hæmorrhage will become external, according as:—

1. The original point of hæmorrhage is nearer the margin of the placenta and nearer the inner os.
2. The amount of the hæmorrhage is considerable.
3. According to the ease with which the hæmorrhage can escape from the uterus—that is, the absence of adhesions.
4. The tone of the uterus prevents it accumulating in its cavity.
5. And as the presentation does not block the lower uterine segment.

The chief practical questions about the mechanism are:—

1. What is the effect of rupturing the membranes?
2. What is the effect of contractions of the uterus on the hæmorrhage?

The direct effect of rupturing the membranes must always be to lessen intrauterine tension and so increase the hæmorrhage. It is said that in a secondary way it tends to check the hæmorrhage by bringing on uterine action. In answer to this, it has been urged that, in the first place, if contractions are not present it is quite uncertain how long it will be before they come on; and, secondly, that uterine contractions can check the hæmorrhage directly only during their continuance, and not during the intervals.

The second point here raised at once leads on to the consideration of the second question—namely, What effect have uterine contractions on the hæmorrhage? The reasons why uterine contractions cannot be looked on as stopping hæmorrhage during the intervals are:—

1. It is the retraction that stops hæmorrhage during the intervals and not the contraction, and we cannot have sufficient retraction of the placental site to stop hæmorrhage as long as the fœtus is *in utero*.

This is freely acknowledged by many authorities, who, when speaking of the treatment, say that the only certain way to stop accidental hæmorrhage is to empty the uterus.

2. In many cases the hæmorrhage does not come on till after labour has commenced, and continues in spite of uterine contractions.

3. If uterine contractions stopped the hæmorrhage, how could accidental hæmorrhage occur at all during the course of labour?

4. There are also some cases in which uterine contractions cause accidental hæmorrhage, as:—

(i.) When the contraction ring has risen high up in the abdomen, and the placenta site has become contracted.

(ii.) When there is delay in the birth of the aftercoming head.

(iii.) In cases of neglected shoulder presentation.

(iv.) After the birth of the first of twins, or the escape of excessive liquor amnii, the uterus often contracts down and separates the placenta—but the retraction of the uterus, though much greater than in an ordinary case, is not sufficient to prevent the hæmorrhage. The detachment of the placenta in these two cases is, however, the exception and not the rule; it is very possible, therefore, that some amount of disease may be present to account for the separation.

But there is no doubt that during a contraction the hæmorrhage is arrested—for, first of all, the supply of blood to the uterus is cut off; and, secondly, the intrauterine tension is increased, so that no blood can escape from the vessels.

A great many authors hold that uterine contractions tend to flatten out the effused blood and so cause further separation of the placenta, or force the hæmorrhage to become external, and amongst them is Dr. Holmes, who likens it to Schultze's mechanism of the third stage. This is, in my opinion, a great mistake, for when the uterus contracts during labour the intrauterine tension is increased, and the portion of the placenta that is still undetached is pressed so firmly against the uterine wall that further detachment is impossible; whereas in the third stage of labour the intrauterine tension is diminished. Moreover, in proportion as the intrauterine tension increases, in the same proportion the difficulty of separating the placenta from the uterine wall is increased. Further, if uterine contractions tended to separate more of the placenta, how could they be looked on as checking the hæmorrhage? In fact it is during the interval, and entirely owing to the vascular tension, that the hæmorrhage spreads and separates fresh portions of the placenta, and finally becomes external. During a pain the hæmorrhage cannot travel, for it is pressed equally in every direction; therefore, it is not the uterine contractions that determine whether the hæmorrhage will become external or continue internal, but the general condition of the uterine wall during an interval, with the other factors already mentioned—namely, the amount and the position of the hæmorrhage, and the presence or absence of morbid adhesions. But as during a contraction the blood everywhere comes to a standstill, time is given for thrombi to form in the mouths of the vessels, and in this manner and to this degree uterine contractions tend to stop the hæmorrhage.

Diagnosis.

External Hæmorrhage.—If blood escapes from the uterus of a pregnant woman towards the end of gestation the first question to settle is whether the hæmorrhage is accidental or unavoidable. This cannot be answered until the os is sufficiently dilated to admit a finger, when, if the placenta is felt, the diagnosis is made. But if the placenta is not felt at the os we are not justified in concluding that the hæmorrhage is not due to a low insertion of the placenta. I am of opinion that it is not by any means always possible to make this diagnosis. Dr. Holmes considers that it is. He says that "a failure to feel placenta makes the diagnosis very certain."[a] At the same time he objects to Dr. Rigby making the diagnosis depend on feeling or not feeling the placenta at the os. I confess I do not know how to diagnosticate hæmorrhage due to low insertion of the placenta from external accidental hæmorrhage; it is not likely, however, to be confounded with internal accidental hæmorrhage or even with combined hæmorrhage. There is another difficulty in the diagnosis—namely, when the circular vein of the placenta ruptures and causes hæmorrhage.

I do not think that either of these conditions can be diagnosticated till after the expulsion of the placenta. The latter subject has recently aroused a great deal of interest in France, and Budin has written a monograph upon it.

Internal Hæmorrhage.—There are two steps in the diagnosis of internal accidental hæmorrhage. The first is to settle that there is a hæmorrhage, and the second to recognise that the hæmorrhage is due to a premature separation of the normally situated placenta. We must not forget that every case of accidental hæmorrhage is at the commencement an internal hæmorrhage. Also that there can be no doubt that a small amount of hæmorrhage between the placenta and uterine wall is by no means uncommon, as was pointed out years ago by Spiegelberg. Now, supposing a woman in the last few months of her pregnancy is suddenly attacked with abdominal pain and a feeling of weakness, or even faints, how are we to diagnosticate whether this is or is not due to internal accidental hæmorrhage? In many cases the diagnosis is impossible till after the expulsion of the placenta. Hence a great many cases of slight accidental hæmorrhage quite elude our observation.

However, once the symptoms of anæmia are well marked, and are accompanied with much pain and tension or localised swelling, there is usually not much trouble about the diagnosis.

Combined Hæmorrhage.—In the case of combined accidental hæmorrhage the diagnosis depends on our recognising that the symptoms are out of proportion to the amount of blood that has escaped. As the hæmorrhage is often recurrent, and the blood may have been removed, or may have soaked through the bed-clothes, this diagnosis is not always easy. So I think it is of great importance that our first thought in every case of accidental hæmorrhage should be—How much of the hæmorrhage is internal?

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[a] Loc. cit. P. 769.

Treatment.

The prophylactic treatment comes first, and can be readily applied to those cases of accidental hæmorrhage due either to accident or to any failure in the mechanism of labour.

The prophylactic treatment of accidental hæmorrhage due to disease is as yet only in its infancy, and opens up an immense field for investigation and experiment, into which I shall not venture to enter, but shall content myself by pointing out that we can fulfil the indications in many cases by curing endometritis, or by lessening arterial tension and venous congestion by appropriate remedies, or by dealing with nephritis or other complications that may be present, or by administering medicines that tend to increase the coagulability of the blood.

The indications for treatment are:—

1. To arrest the hæmorrhage without emptying the uterus; or, if this is not possible,
2. To empty the uterus before the patient succumbs to the hæmorrhage, in whatever way is least likely to cause rupture of the soft parts, with the consequent *post-partum* hæmorrhage and shock.
3. To treat any *post-partum* hæmorrhage that may occur.
4. To combat the anæmia.

The means at our disposal for fulfilling the first indication—namely, stopping the hæmorrhage without emptying the uterus—are:—(1) Lessening the *vis à tergo;* (2) increasing the intrauterine tension, or *vis à fronte;* (3) favouring the formation of thrombi.

We can quiet the heart's action by rest and opium, and lessen congestion by salines, &c. We can increase the intrauterine tension (1) by causing contraction and retraction of the uterus; (2) by preventing the escape of the blood by plugging the vagina or cervix; (3) by firm pressure on the uterus, either by the hand (Kristeller) or by the vaginal plug and abdominal binder (Smyly), or by the vaginal plug and abdominal binder, aided by a firm perineal bandage (Purefoy).

The formation of thrombi is favoured by every method that retards the flow of blood. Dr. Tweedy thinks systematic plugging does this by stopping the circulation in the uterine arteries.

The most important of the methods of stopping hæmorrhage without emptying the uterus is plugging the vagina. This method of treatment is very ancient, and I have not attempted to trace it to its source, but Rigby, in his book, gives the following description of Leroux's method:—

"This consists in introducing such a quantity of lint, moistened with vinegar, into the vagina as will completely fill it, and which, by pressing mechanically, upon the os uteri, will prevent the external escape of any more blood, and consequently make that coagulate which is retained, and which obviously must press on the placenta, and, at least for a time, stop the discharge. He (Leroux) is of opinion that by doing this such a check may be put to the flooding as will admit of the surgeon's waiting securely until the uterus is sufficiently dilated to allow of artificial delivery, or until Nature herself be able to accomplish it."[a]

This treatment was applied by Leroux to all cases of uterine hæmorrhage, even to *post-partum* hæmorrhage, which application of it Rigby seems to approve.[b]

Leroux's method is quoted by Cazeaux, who used it even after the rupture of the membranes. If the hæmorrhage was severe and there were pains present he preferred rupturing the membranes to plugging the vagina.[c]

Plugging the vagina was also recommended by the late

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[a] Rigby. On Uterine Hæmorrhages. P. 63.

[b] Rigby. Preface. P. xvii.

[c] Cazeaux. Ninth edition. Pp. 804-5.

Professor Schroeder in his celebrated work on midwifery, but only in cases where the membranes were not ruptured, and even then the occurrence of internal hæmorrhage was to be watched for.

But of recent years plugging has not been looked on with much favour in this country. Barnes, in his "Obstetric Operations," does not give it as one of the treatments of accidental hæmorrhage. Galabin ruptures the membranes, and uses a vaginal plug only if the membranes are inaccessible.[a] Dr. Herman calls it "a clumsy and painful way" of "stimulating the uterus to contraction."[b] And still more startling is the conclusion arrived at by Dr. Holmes, who says: "The tampon should have no place in the treatment of accidental hæmorrhage."[c]

It is undoubtedly to Dr. W. J. Smyly that we owe the reintroduction of the vaginal plug for the treatment of accidental hæmorrhage. He was led to adopt this method by the very bad results that followed more active interference in the cases he was called on to treat soon after being appointed Master of the Rotunda Hospital, and in a paper read before this Association at the meeting at Bristol in 1895 he claimed for plugging that it (1) prevented external bleeding, (2) excited labour pains, (3) increased rapid dilatation of the os, and (4) caused increased intrauterine tension; but he restricted its use to cases of external accidental hæmorrhage before the rupture of the membranes. Dr. Jellett gives a good account of this treatment in the last edition of his "Midwifery," and he applies it even after the membranes are ruptured, provided strong uterine action is present.

Dr. Purefoy, who followed Dr. Smyly as Master of the Rotunda, has developed this method still further, and now holds that it is capable of controlling not only external accidental hæmorrhage, but even the worst forms of internal hæmorrhage.

I take the description of his method from Dr. Colclough's paper. He says (p. 153):—

"The plugs used are small tampons of sterilised cotton wool, about the size of a large walnut. Lysol, creolin, and perchloride of mercury are the antiseptics used. After all the necessary antiseptic precautions used for any obstetric operation have been taken, a catheter is passed, and the operator proceeds to plug. The patient is placed in the lithotomy position, and the fingers of the hand which was not used for cleaning the vulva, &c., may be used for plugging, and the other hand acts as a speculum. The plugs are taken out of the solution separately, and wrung almost dry; the first one is placed in the posterior fornix, and the fornices are systematically packed with a fair amount of pressure. Each plug is put in position with a purpose to form a ring round the cervix, and packing is continued systematically downwards until no more can be introduced into the vagina. The operator then takes a large strip of iodoform gauze and places it over the plug, which will be projecting from the vagina, instructing an assistant with clean hands to hold the gauze in position while the binder and T bandages are put on. The iodoform gauze is not always used, but the author has found it of great practical value.

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[a] Galabin. 1886. First edition. P. 389.

[b] Herman's Difficult Labour. 1894. P. 297.

[c] Loc. cit

"Chloroform as an anæsthetic need not be given; it will only be required if the patient is very restless, and it is a remarkable fact how little is necessary to render the patient quiet—merely a few whiffs. . . .

"The binder should have been placed under the patient before the plugging was commenced. It is now brought down into position, while the patient is swung round into the bed. Strong pins and a stout binder are needed. The first pin must be placed above the fundus as near to the ensiform cartilage as possible, and the binder secured extremely tightly downwards as far as the symphysis. Lastly, the perineal bandage is put on, pinned well up the binder in front, three couples of pins being required. The patient is then rolled over on to her side, and the bandage secured at the back in the same way, the assistant keeping up steady pressure with his hand on the iodoform gauze. The plugs are thus kept in place until thoroughly secured by the tight perineal bandage. In this manner pressure is made on the front of the uterus and abdomen by the tight binder, and the uterus is forced downwards as well as on to the firm mass of plugs. The abdomen and the abdominal veins will also be compressed."

Dr. Colclough's paper is founded on 83 cases of accidental hæmorrhage, in 43 of which the plug and binder were used. The after-treatment consists in warmth, warm nourishment, and ½ gr. of morphin subcutaneously.

The medical attendant is sent for if (1) pains come on; (2) plugs begin to bulge ; (3) hæmorrhage comes through plugs; or (4) if patient has any faintness.[a]

As a result of his experience he concludes:—

"If the uterine walls are so diseased that, as the result of intrauterine pressure, they distend, then it is claimed that the plug and binder, applied in the manner which has been described, render them capable of withstanding the pressure of the escaping blood, and so control the hæmorrhage."[b]

All risk of *post-partum* hæmorrhage is done away with.[c] The plug can be easily applied, &c.

"As the object of the Rotunda method is to allow of a natural delivery, the membranes must therefore not be ruptured until as late as possible. Great judgment is required on this point."[d]

"If the pains become vigorous the perineal bandage should be taken off and a few of the plugs removed. The contraction of the uterus will force out the rest; only then should the membranes be ruptured if they are still intact."[e]

Out of 43 cases so treated only 2 died. One of these died of the hæmorrhage undelivered, and the second died with rupture of the lower part of the uterus, after she had delivered herself.

During the last year of his Mastership Dr. Purefoy had 13 cases of accidental hæmorrhage, in 7 of which the vaginal plugging was used, as he says, "with the admirable results which, as our former reports amply demonstrate, follow its use."

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[a] Loc. cit. P. 161.

[b] Loc. cit. P. 163.

[c] Loc. cit. P. 164.

[d] Loc. cit. P. 164.

[e] Loc. cit. P. 164.

Thus, in favour of plugging, we have Dr. Smyly, who read a paper on the subject before this Association in 1895 at Bristol; Dr. Purefoy, the ex-Master, to whom the credit is due of having recognised the enormous importance of pressure applied externally, and who invented the efficient method of applying it which I have now brought under your notice; Dr. Tweedy, the present Master, the author of an excellent paper on the use of the vaginal plug in the treatment of accidental hæmorrhage, in which he claims that by its proper application you can stop the circulation in the uterine arteries, and who is still as enthusiastic as ever in favour of the method; and, lastly, the author of the paper I have had the honour of reading here to-day, whose views you have listened to so long and so patiently. Thus, curiously enough, you have the last four Masters of the Rotunda Hospital firm believers in—I may say supporters of—the method.

If the claims that Dr. Purefoy makes for his method of treating accidental hæmorrhage should prove to be well founded, as I have little doubt they will, it will simplify enormously the treatment of accidental hæmorrhage; it will save many a lonely practitioner from hours of mental and moral anguish; it will be the means of preserving many a valuable life that without it would be lost; and it will for ever redound to the credit of the Dublin School of Midwifery, to which we are all four proud to belong, and of which its worthy originator is such a distinguished ornament.

To fulfil the second indication for treatment we must divide the cases into those where the cervix is dilated and those where it is not. When the cervix is dilated I do not think the exact method of delivery is of such importance, and we are guided in our choice by well-known general principles.

The question of treatment is very shortly stated by Bumm in his well-known work on obstetrics. He says:—

1. If the os is dilated, deliver at once;
2. If the os is closed, dilate if there is time; if not—
3. Deliver by vaginal Cæsarean section.

This seems very simple, but when we look at it more closely we find that most of the difficulties of treatment are hidden, or obscured, under the phrase "dilate if there is time." For no matter what method of dilatation you choose—and personally I do not think the choice of the method is the important point—you will, sooner or later, be put in the dilemma of losing your patient from the hæmorrhage if you delay, or losing her from rupture of the soft parts if you hurry. We possess no set of rules which will tell a man under these circumstances how much time he has for effecting dilatation, and I know of no position in midwifery so trying as when we are called on to make our choice between letting the patient die of the hæmorrhage or run the risk of causing her death by delivering too quickly through an undilated cervix.

Nor when the case is over does our experience help us much by pointing out in which direction we have erred. For if our patient dies of the hæmorrhage without being delivered, we cannot be sure that she would have been saved if we had delivered her through the undilated cervix. And if she dies from the injury to the cervix, we can never be quite sure that she would not have died from the hæmorrhage if we had taken enough time in the dilatation to avoid rupture of the soft parts.

Personally the memory of several cases makes me entirely in favour of performing Cæsarean section, rather than attempting to solve the difficulties of the above dilemma. And, if Cæsarean section is our choice, the opinion of the profession abroad is becoming more and more in favour of Dührssen's vaginal operation.

If, however, we determine on trying to deliver the patient by dilatation we can choose between (1) manual or (2) instrumental dilatation. Under manual dilatation I would include not only dilatation with the fingers, but also bipolar version, and bringing down a leg. While under instrumental dilatation I would include all the various forms of bags, Barnes's, Brauns's, or Champetier de Ribes's, either with or without the addition of elastic traction, and Hegar's and Bossi's dilators. The latter instrument has undergone several modifications since its first introduction, and there can be no doubt that by increasing the number of blades in the dilator from four to eight, as Frommer has done in the instrument that I now show you, the risk of causing rupture of the cervix has been considerably reduced.

But no method of dilatation gives any answer to the questions: How long have I got to effect dilatation of the soft parts before the patient dies of hæmorrhage? or, How long will the soft parts require for dilatation without risk of producing serious rupture of the cervix? Unless we adopt the method of treatment by plugging, as already fully described, these questions must remain for ever the unsolved difficulties in the treatment of bad cases of accidental hæmorrhage.

Conclusions.

The most important conclusions at which I have arrived are:—

1. That in the absence of disease all accidental hæmorrhage has a natural tendency to stop.
2. That all accidental hæmorrhage commences as internal hæmorrhage, and that many cases of internal hæmorrhage cease spontaneously and are not diagnosticated at all or only by finding old clots on the surface of the placenta *post-partum*.
3. That a large proportion of cases of so-called accidental hæmorrhage is due to low insertion of the placenta, and that the diagnosis of this is difficult, and cannot always be made with the finger.
4. That hæmorrhage from low insertion of the placenta is not likely to cause either internal or combined hæmorrhage.
5. That rupture of the circular sinus of the placenta gives symptoms that are very similar to those of internal hæmorrhage, or even combined hæmorrhage.
6. That there are other factors, besides want of tone in the uterine walls, that tend to cause the hæmorrhage to remain internal—for example, lessening of the *vis à tergo*, the position of the first hæmorrhage, and its amount, as well as firm adhesions around it.
7. That in the worst cases, where the cervix is long and

os rigid, it is (probably?) necessary to deliver the woman immediately.

8. That the Cæsarean section, either vaginal or abdominal, is a better way of doing this than the *accouchement forcé.*

9. That less severe cases, when the cervix is long and os rigid, should be treated by a properly applied vaginal plug.

10. That in writing or speaking English it is better to use the terms "plug" and "plugging," than the terms "tampon" and "tamponading."

11. That uterine contraction may cause the hæmorrhage to cease during the contraction, but not during the intervals, except indirectly as favouring thrombosis.

12. That if uterine contractions stopped the hæmorrhage, accidental hæmorrhage during labour would not occur.

13. That accidental hæmorrhage is often due to uterine contractions—for example, after the sudden escape of excessive liquor amnii and after the birth of the first of twins.

14. That when the hæmorrhage escapes from under the placenta the tendency to further separation of the placenta is lessened, because the membranes (unless morbidly adherent) are easier separated than the placenta.

15. That this is even more the case once the hæmorrhage has become external.

16. That rupturing the membranes must always cause a diminution in the intrauterine tension.

17. That it is uncertain how soon pains will supervene.

18. That rupture of the membranes makes it more difficult to increase the intrauterine tension by plugging the vagina.

19. Therefore rupture of the membranes is not good treatment for ordinary cases of accidental hæmorrhage, unless it causes rapid expulsion of the child.

20. That rupture of the membranes is a most efficient way of stopping accidental hæmorrhage which is caused by a persistence of the bag of waters far into the second stage.

21. For an exactly similar reason, rupture of the mem-

branes is most efficient in stopping hæmorrhage from low insertions of the placenta.

22. That the great danger in effecting delivery of the child *per vias naturales* when the cervix is only partially dilated is due to the great difficulty there is in judging how much time is at our disposal to effect the dilatation.

23. That in plugging the vagina and the application of a tight binder and a firm perineal bandage we have a most efficient method of treating all but the worst cases of accidental hæmorrhage, perhaps even these.

24. That if the hæmorrhage has been recurrent the same symptoms are more urgent than where the hæmorrhage appears for the first time.

25. That adhesions may stop internal accidental hæmorrhage by causing localised increase of tension, but we cannot diagnosticate their presence.

26. That if the original seat of the hæmorrhage is at the very centre of the placenta, the whole of the placenta will become detached, and if the placenta is situated exactly at the fundus, the membranes also will be all separated before the hæmorrhage becomes external.

27. That prolapse of the placenta depends on both these conditions being present.

28. That all cases of accidental hæmorrhage should be reported, and not the severe cases only, and the position of the rupture in the membranes carefully noted.

Questions for Discussion.

The following are the questions that I would venture to propose for our consideration:—

1. In what direction may we hope to find the clearest indications for the prophylactic treatment of accidental hæmorrhage?

2. Is rupture of the membranes to be recommended as a routine treatment in every case of accidental hæmorrhage?

3. If not, to what cases should its use be restricted?

4. Can we confidently expect that uterine contractions will arrest accidental hæmorrhage?

5. Is Cæsarean section or the *accouchement forcé* the

better method of delivering the worst cases of accidental hæmorrhage?

6. Does instrumental dilatation of the cervix offer any great advantages over bipolar version and bringing down a foot?

7. Does the term "ablatio placentæ," detachment or separation of the placenta, proposed by Dr. Holmes, convey any more accurate idea of the condition we are discussing than the usual one—accidental hæmorrhage; or does it not entirely fail in differentiating this condition from that of separation of the placenta when it is prævia?

8. Have we in systematic plugging of the vagina, combined with firm pressure on the uterus and a strong perineal bandage, a safe, simple, and reliable method of treating all cases of accidental hæmorrhage?

ART. III.—*A Case of Glanders.* By EDWARD F. STEPHENSON, F.R.C.S.I., D.P.H.; Dunmore East, Co. Waterford.

P. M., a farmer's son, aged twenty-one years, of powerful make and robust constitution, sickened on October 1st, 1904, with general malaise and pains, but no rigors. His mouth became sore, and hard swellings formed on the gums and roof. A few days later a large tumour appeared in the right submaxillary region, and smaller tumours beneath the left jaw. He continued to work on the farm till October 15th, when I was called to see him. I found the gums and hard palate covered with nodules; the teeth were loose, and fœtid pus welled up between them and the gums; the breath was fœtid; a hard, nodular mass filled the right submaxilla; it was fixed to the lower jaw, and was painless on pressure; a dusky red phlegmonous patch partly covered the chin. The patient was unable to breathe through the left nostril, from which there was an offensive discharge; the chest, abdomen and back were covered with subcutaneous nodules, varying in size from a pin's head to that of a bean; the skin over these was red, except in a few instances; subcutaneous nodules were also present on the forehead, over both eyes and on the left temple. The temperature was normal; pulse, 100; respirations, 24. He complained of noise and deafness in the left ear, and of having sweated freely on a few occasions. He had suffered from neuralgia for some days before the onset of his illness; and he was accustomed to pick his teeth with his finger nail. Glanders was diagnosticated, and as the relatives would not permit his removal to the fever hospital the patient was promptly isolated in his own house. The strictest inquiry failed to elicit information of the illness of horses, donkeys or mules on the farm, nor did his movements for some days prior to the onset throw light on the origin of the disease. The farmyard showed an entire absence of sanitation. Some days later, after very minute inquiry, I learned that a horse had been sick in 1902 in a small adjoining farmyard belonging to his father, but quite distinct from the farm dwellings. This horse had been sick for three or four months; he had suffered from a sore throat and nose, and the breathing had been considerably embarrassed; abscesses had formed on the head and body, and were, from time to time, lanced by members of the family, "the matter shooting across the yard." The horse recovered, and was sold. The stable was twice limewashed, and in due course the manure removed, with the exception of about two feet, which remained in the yard The stable was soon occupied by another horse, and the remains of the old heap became quickly covered with fresh manure. Four days before P. M. became ill he was engaged in removing this heap, and on this occasion none was left behind. He was suffering from neuralgia and picked his teeth with his finger nail. I visited the patient frequently. He became progressively worse. Nodules appeared on the soft palate, fauces, and in the second nostril; dyspnœa became extreme. The nodules on hard palate softened, and were lanced, discharging pus and blood; those on the soft palate and fauces and the "farcy buds" on body showed no sign of suppurating. Antiseptic gargles and mouth washes were freely used, a plentiful supply of nourishment and stimulants allowed, nux vomica, quinine and strophanthus administered. On October 24th the pulse quickened (140) and grew feeble, the temperature rose to 101° F., and delirium supervened. Dr. Jackman, of Waterford, saw the case with me on the 28th. He was then sinking. No improvement occurred, and at 2 a.m. the morning following he succumbed to exhaustion.

The points of interest in this case are:—(1) The source of infection, and (2) the seat of the primary inoculation.

Three cases of illness had occurred since 1902, all of which terminated fatally:—1. April, 1902, P. P., aged fifty-nine years, residing in a house close to farmyard, *pneumonia.* 2. May, 1903, E. M. (patient's mother), aged sixty-five years, *pneumonia.* 3. October, 1903, J. M. (patient's brother), aged about twenty years, *abdominal abscess.*

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

At a meeting of the College held on December 15th, 1904, the following gentlemen, having passed the requisite examinations, were admitted ordinary Fellows:—William Hope Fowler, M.B., Ch.B., Edinburgh; David Fyfe, L.R.C.S.E., Glasgow; Sidney Alfred Gibbs, M.B., C.M., Nelson, New Zealand; John Stroud Hosford, M.R.C.S. Eng., L.R.C.P. Lond., London, S.W.; Trevor Howell, M.R.C.S. Eng., L.R.C.P. Lond., Walsall; William Irwin, M.B., C.M., Singleton, N.S.W.; John Alexander Campbell Kynoch, M.B., C.M., Dundee; Roderick Murdoch Matheson, M.D., Edinburgh; and Walter Silverwood Richardson, M.R.C.S. Eng., L.R.C.P. Lond., Boscombe, Hants.

THE ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

This illustrious Society was founded on May 22nd, 1805; and the Council have resolved to celebrate the Centenary Year in May, 1905, in a manner worthy of the occasion. To fulfil this purpose they have provisionally made the following arrangements:—1. There will be a Reception by the President, Sir Douglas Powell, Bart., at the Society's house. 2. An Exhibition will be held of books, prints, portraits, instruments, drugs, &c., published or in use at the time of the foundation of the Society. 3. A Centenary Volume will be published, giving a narrative history of the Society and its work. A copy of this volume will be presented to each Fellow. 4. There will be a Festival Dinner. 5. A Conversazione, to which ladies will be invited, will take place at the Royal College of Surgeons, by the kind permission of the President and Council of the College. It is intended to invite a number of representative guests to the Festival Dinner.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Biographic Clinics. Vol. II. The Origin of the Ill-health of George Eliot, George Henry Lewes, Wagner, Parkman, Jane Welch Carlyle, Spencer, Whittier, Margaret Fuller Ossoli, and Nietzsche. By GEORGE M. GOULD, M.D.; Editor of "American Medicine"; Author of "An Illustrated Dictionary of Medicine, Biology &c.," "Borderland Studies," "The Meaning and Method of Life," &c. Philadelphia: P. Blakiston's Son & Co. 1904. 8vo. Pp. 392.

THE names which appear on the title-page of this second (and concluding) volume of Dr. Gould's Series of "Biographic Clinics" must necessarily give these papers a special interest for all cultured readers. The actual existence of prolonged martyrdom, which was the real physical life of so many of the most conspicuous heroes of science, and of art, and of culture, in its highest forms, is here presented with a ghastly vividness of outline and precision of detail which is almost overpowering enough to reconcile us, poor intellectual pigmies, to the limited possession of the few and small intellectual talents which it has pleased an all-wise Providence to confer upon us. The mental and physical supersensitiveness and irritability which have so prominently characterised the possessors of genius throughout the whole history of the human race go far, indeed, towards balancing the value of their superior intellectual endowments in the enjoyment of life; and should, in deference to the rules of Christian charity, go far, too, to diminish the envy and jealousy with which their contemporaries never fail to survey them. Perhaps public knowledge of the biographic facts would do a good deal in this direction; but, as such knowledge is never attained by the public till after the close of the lifepilgrimage which afforded it, the revelation comes always too late.

The boyish freshness of enthusiasm with which Dr. Gould continues to pursue his chosen mission of opening the eyes of all the nations to the subtle evils of *eye-strain* which is everywhere found lurking in the atmosphere, as well as in the herbage, through which the Tree of Knowledge must be approached, has by this time penetrated deep within the borders of the promised land of success. Like every other bold attempt at a wholesale conversion of the multitude—and especially of the so-called "learned," or scientific, multitude—the writer was obliged for some time to preach on the margin of the wilderness, while comparatively few converts were found to arise and go unto the preacher to submit to have their refractive errors duly tested, and undergo the regeneration which can be conferred only by pure spectacular baptism. But, having escaped the decapitation which perhaps might have been morally arranged for him by his opponents, by birth and residence in the Western Home of Freedom, the new doctrine has penetrated the strongholds of its enemies, its leaven has reached even their hearths, and is now daily leavening the mental pabulum prepared for them and the members of their households. The importance of the movement of enlightening the public—lay as well as medical—with regard to the existence of this serpentine plague of an age of too much writing and reading—to say nothing of book-keeping—could have been gauged by the prophetic eye by the amount of opposition and sarcastic comment to which it gave rise. The enunciation of a new idea, like the transmission of an electric current, invariably gives rise to the development of "resistance." And the less capable the medium which has to be traversed is of the conveyance of thought, or of electricity, as the case may be, the greater is the resistance to be overcome, and the greater is the elevation of temperature produced by the transmission. Let each of us for the moment practice a little self-candid introspection: he will then soon ascertain that no man—especially one who has reached the prosaic age of forty—exactly relishes to have pointed out to him that an item of doctrine which he had been always teaching as an important fact, or an exalted truth, is quite the opposite. It is almost tantamount to being informed that, in one particular at least, he had up to present date always lived and thought as a fool. One specimen of argument used against the comprehensiveness of Dr. Gould's views is that astigmatism is but a discovery of recent date. A bad specimen of twentieth-century logic, surely! Biographic evidence if given in full and observant detail should be able to establish an identity by word-painting, we should say. We have a very vivid recollection of being told by a medical man many years ago that he never knew what was the disease which caused his father's death—his medical attendants could make no attempt to name it—till he read Trousseau's description of labio-glosso-laryngeal paralysis, and was thunderstruck with the unmistakable picture of his suffering parent's death-bed! Some of the evidence on which he has constructed diagnostic opinions are not regarded by certain critics as conclusive. The statement that Parkman neglected his studies at Harvard is supposed to be overbalanced by the fact that he graduated with high rank—although we have ourselves had opportunities of seeing cases in which the free enjoyment of alcohol and card-playing occupied a vastly greater proportion of an undergraduate's waking hours than reading—with or without astigmatism—and the college career was, nevertheless, closed with high honours by the spasmodic grafting of good oral cram on an exceptionally receptive stock. Then we are told that both *experience* and *common sense* are against the idea that the small errors of refraction—so often overlooked even by oculists—can be the cause of persistent and serious symptoms. The very occurrence of the terms "experience" and "common-sense," or of one of them, in a scientific argument never fails, we must confess, to arouse our very worst suspicions. They are, par excellence, the chosen and privileged weapons of ignorance and assumption. The writer of this review has a very vivid recollection of the crushing argument with which the West of Ireland illiterate farm labourer always met his schoolboyish attempts to prove to him that our world revolved on its own axis. "Shure, now, I have the expayrience of more than sixty years, livin' in the same house all that time; and every night when I'm goin' to bed, Paddy ——'s house is opposite my front dure, and Micky ——'s house is opposite my back dure, and I find them there sthill when I rise out o' my bed nekbht mornin'. Now, if all this talk about the world goin' round in twenty-four hours was thrue, wouldn't Paddy ——'s house be seen in the mornin' where Mickey ——'s was at bed-time?" Of course the missing minor premiss requisite for the conversion of his enthymeme into a syllogism was: "The world has a fixed material axle, if any, on one extremity of which my house is fixed." Men of any denomination, however, rarely employ logic in the process of reasoning; and much of the unmanageable argumentation of even our own twentieth century depends for its origin and survival on the egotism which furnishes the hypothesis that the central axis around which every dispute revolves passes through the individual—his person, his house, or his ox, or his ass, or something else that is his. Poor old Teague's argument against the diurnal revolution of the earth—copiously interlarded, as it always was, with talks of "common-sense and expayrience"—will be found to cover a large proportion of the methods of even twentieth century metropolitan scientists.

But even Dr. Gould's most energetic opponents now admit that the existence of eye-strain is a substantial evil, and a remediable one; so that now the question has come to be rather one of quantity than of quality. And they have also come to admit—what is an all-embracing tribute to the value of Dr. Gould's efforts and the degree of success which they have already attained—that all ophthalmic surgeons will require in future to be very careful to avoid affording justification for his sweeping strictures, and all physicians must take care to have the dioptric media of all their neurotic patients scrutinised with mathematical accuracy. When all such precautions are taken in every individual case, we feel sure that the latter will be saved from many a pitfall. We consider that the present position of the "eye-strain" question leaves no possible doubt for the unprejudiced inquirer respecting the value of the movement for the correction of this evil which he continues to maintain so vigorously. And when some of his forcible statements are met by such items of information as "mere abuse is eminently distasteful to gentlemen" we are vividly reminded of Johnson's characteristic aphorism—"Patriotism, sir, is the last refuge of a scoundrel." When a critic has no other argument to offer his opponent than the *ad hominem* one of impertinence, and no other shield than that afforded by his mantle of *gentlemanliness*, the sooner he resigns his weapons to a competent hand the better for science and the better for humanity and truth. We cordially congratulate Dr. Gould on the success which he has obtained in insuring for the "eye-strain" question a full and free investigation, and the public—especially its reading and writing members—on the exposure (and facility for cure) of one of the special ills of modern civilised life.

Hand-book of Physiology. By W. D. Halliburton, M.D., F.R.S.; Professor of Physiology, King's College, London. Sixth Edition (being the Nineteenth Edition of Kirke's Physiology), with nearly Seven Hundred Illustrations, including some Coloured Plates. London: John Murray, Albemarle-street. 1904. 8vo. Pp. xxiv +902.

Very few words will suffice to record the publication of a new edition of this excellent and deservedly popular hand-book. Mr. Murray, the publisher, has wisely adopted a larger type and also increased the size of the page, and the learned author has taken advantage of these alterations to make considerable changes in the letterpress. The parts of the work which have undergone most revision are those relating to the nervous system and to the circulation of the blood. Under the latter head Professor Halliburton has devoted some space to those elementary principles of physics which underlie what is often called "hæmodynamics." He has done this in order to enable medical students to apply their knowledge of physics to the elucidation of physiological problems. In his preface he expresses his acknowledgments to Professor T. Gregor Brodie, of the Royal Veterinary College, London, who has made a special study of hæmodynamics, for the help he has given in the revision of the part of this edition which deals with the circulation.

The author also draws attention to the fact that sections which treat of what may be called "advanced work" are printed in small type and made as brief as possible. He recommends the student to omit such passages on reading the book for the first time. It would, however, be a great mistake for any student to pass by these advanced sections altogether. Take, for example, the highly important and yet clear account of Osmotic Phenomena, which will be found in small type at pages 321 to 327, inclusive.

As a specimen of the clearness and simplicity of the diction we cannot do better than quote the author's description of the condition called the "Reaction of Degeneration":—"Suppose a patient comes before one with muscular paralysis. This may be due to disease of the nerves, of the cells of the spinal cord, or of the brain. If the paralysis be due to brain disease, the muscles will be slightly wasted owing to disuse, but the electrical irritability of the muscles and nerves will be normal, as they are still in connection with the nerve-cells of the spinal cord that control their nutrition. But if the paralysis is due to disease either of the spinal cord or of the nerves, this nutritive influence can no longer be exercised over the nerves or muscles. The nerves will degenerate; the muscles waste rapidly; the irritability of the nerves to both forms of electrical stimulation will be lost; the muscles will not respond to the faradic current, but in relation to the constant current they will exhibit what we have called the 'reaction of degeneration.' This illustrates the value of the electrical method as a means of diagnosis, that is, of finding out what is the matter with a patient. It is also a valuable means of treatment; by making the muscles contract artificially, their nutrition is kept up until restoration of the nerves or nerve-centres is brought about" (page 188).

The new edition of "Halliburton's Physiology," by which name this work is now known, appears opportunely on the eve of another medical session. We cordially recommend it as one of the best text-books on the subject which has ever appeared in the English language.

Diseases of the Eye. By L. WEBSTER FOX, M.D. With 5 Coloured Plates and 296 Illustrations in the text. London: Sidney Appleton. New York: D. Appleton & Co. 1904. Pp. 584.

THIS elaborate and beautifully got up, yet somewhat crude, production is, we are informed, "the outgrowth of a series of lectures delivered by the author at the Medico-Chirurgical College and Hospital during the past ten years. Its object is not to supply a mere ephemeral sketch of existing information on ophthalmology, but to provide a digested summary of the known facts for use of students who in after life become practitioners of medicine."

"The arrangement of the work differs materially from most text-books on the subject. The diseases are considered according to the structures attacked in the order in which they are encountered in going from without inward. Refraction and ametropia are consequently considered in the latter part of the book on account of the influence they exert on all ocular conditions."

"In an endeavour to render each chapter a complete essay on the subject mentioned in its heading there has resulted a certain amount of repetition of the elementary points. Much has necessarily been left unsaid. For students who wish to follow the practice of ophthalmology exclusively the author has simply laid a foundation upon which, by practice and careful observation, they may build for themselves a broad reputation, and confer upon the afflicted the greatest of all benefits—the restoration of vision."

The basis of the book being a course of lectures dating back for ten years, it is only natural that it should contain much that is old and omit much that is new, as, for example, any mention of the surgical treatment of myopia.

The author's nomenclature is at times peculiar; as when he puts "kerato-globus" and "buphthalmos" as synonymous terms.

The glossary also contains some surprises. Ophthalmia is simply defined as "inflammation of the eye," and Trichiasis as "abnormal *eversion* or inversion of the eyelashes." Nyctalopia he defines as "day blindness," thus adhering to a now discredited nomenclature. But in spite of its general illiteracy so frequently observed in the medical writings of our transatlantic cousins, and its numerous imperfections, the book is vigorously written, has a strong tinge of the author's personality (a point always most welcome in these days of book-building for advertisement sake), and will, we have no doubt, be found a most acceptable aid to those students of ophthalmology who are desirous of laying the foundation spoken of in the preface.

The Advantages of Ambidexterity. A Lecture delivered before the Ambidextral Culture Society by the Honorary Secretary on the 4th May, 1904, at the Rooms of the Medical Society, 11 Chandos-street, Cavendish-square, W. The Ambidextral Culture Society, London. London: Sampson Low, Marston & Co., Ltd. 1904. 8vo. Pp. 32.

AMBIDEXTERITY—the "two handedness" of the Ambidextral Culture Society, "the quality of being able to use either hand with almost equal facility" of the great Dr. Samuel Johnson, is a human accomplishment whose usual absence and desirable presence have been exercising the wit of scientists—or quasi-scientists—a good deal in various localities during recent years. As the lecturer truly observes—"What so natural, what so reasonable, as to suppose that the more perfectly our limbs, members, and organs are developed, and the more dextrous and useful they become, the better it is for us, whether as individuals or as a race? Is not this the sole object of all true education, whether that education be special or general? Whether it be moral, mental, or physical, should not the aim be to cultivate every faculty to its maximum development? Are not our hands given to us for this very purpose? And why one more than the other? Why should not both hands be as equally skilful as they undoubtedly are equally endowed, and equally capable for the performance of every function, exercise, and occupation that either of them can be called upon to engage in? Why should they not be actually interchangeable in *every kind* of manipulative work, just as they are in a few special industries and professions, such as pianoforte playing, surgery, &c.?" The history of the unsatisfactory state of human thought and action with regard to these questions furnishes, of course, the *raison d'être* of the Ambidextral Culture Society. Of course, some conservative objections are still raised in many quarters, to the effect that equal education of the hands is as preposterous and unnatural as equal education of the sexes; that division of labour is always characteristic of advancing civilisation, and that the expenditure of time and attention necessary for the attainment of perfect ambidexterity could be employed in other directions with better results. Still, it must be admitted, we think, on all hands, that the attainment of perfect, or approximately perfect, ambidexterity would really prove a consummation devoutly to be wished. The arguments of many important authorities in its favour are included in the text of the pamphlet before us, and will well repay a careful perusal. A good many are, of course, familiar to most readers already. There is one which has struck us as being comparatively new—probably, perhaps, developed within the present century: "But there is yet another benefit accruing from such an innovation that we think has escaped general notice. I cannot help thinking that by the equal training of both hands (which, as we have seen, carries along with it the sequential development or organisation of the two brain lobes, also equally and similarly) the moral sense will be perceptibly, if not proportionately, raised; that the individual will thus be enabled to discern more readily and surely right from wrong, and that he will also be stronger both to follow the right and to resist the wrong than he could be as a lop-sided person with only one brain-lobe fully and perfectly organised." As this view has left us with a distressful sense of our own moral inferiority, we will conclude our notice of this interesting pamphlet by commending it to the critical consideration of every individual reader.

YEAR-BOOKS FOR 1905.

1. *An Almanack for the Year of Our Lord* 1905. By JOSEPH WHITAKER, F.S.A. London: 12 Warwick-lane, Paternoster-row, E.C. 8vo. Pp. 792.
2. *Whitaker's Peerage for the Year* 1905. Being a Directory of Titled Persons. London: J. Whitaker & Sons. 8vo. Pp. 707.
3. *Who's Who,* 1905. London: A. & C. Black. 1905. 8vo. Pp. 1796
4. *Who's Who Year-Book for* 1905. London: Adam and Charles Black. 1905. 8vo. Pp. 128.
5. *The Englishwoman's Year-Book and Directory,* 1905. Seventh Year of New Issue. Edited by EMILY JANES, Organising Secretary to the National Union of Women Workers of Great Britain and Ireland. Twenty-fifth Year. London: Adam and Charles Black. 1905. 8vo. Pp. xxxv + 368.

THESE ever-welcome and justly popular Annuals have been published in good time this year, and will doubtless have played an important part in the list of Christmas boxes for 1904.

1. "Whitaker's Almanack" has reached its thirty-seventh year. As usual, its pages—which now number nearly 800—are replete with instructive information of all kinds—scientific, political, national and international, commercial and philanthropic. A political history of the world was a novel and attractive feature in the thirty-

sixth issue—that for the year 1904. Summaries of the military and educational systems of the world now appear for the first time (at pages 645 to 658, inclusive). They are followed by an article by Mr. Edward Heawood on "Geographical Progress and Territorial Changes in 1904," in which the chief interest centres in the account of the Antarctic Expeditions which have come to such a happy conclusion within the past few months. Among other additions we observe articles on the Movement of British Commerce in 1904, by Mr. Herbert H. Bassett; on the Patents Act, 1902, and British and Foreign Patents, by Mr. Arthur H. Stanley; and on British Holiday and Health Resorts from a railway point of view (pages 756-758, inclusive). To make room for these additions, some sections have been of necessity omitted, but the value of the Almanack grows apace from year to year.

2. "Whitaker's Peerage" is one of the most useful books with which we are acquainted. There is no material change in the issue for 1905, and it is a remarkable fact that among the Peers no creation or promotion took place in 1904. In the introduction short additions have been made to the paragraphs on the Peerage of Scotland, the Military Knights of Windsor, and the Order and League of Mercy. The editor has spared no pains in getting reliable information from the highest authorities. Thus he has referred to the Lord Chamberlain in regard to the designations and style of the relatives of peers, and to the Colonial Office concerning the Colonial use of the term "Honourable." The editor's remarks on claimant baronets and others, if not complimentary, are in accordance with common sense. They conclude with these words—"All claimants, whether as Baronets or as Peers, are now printed in our *smallest type.*"

On many occasions we have had need to consult the "Peerage," and never in vain. It is a marvellous compilation, and not the least remarkable thing about it is its cheapness. Bound in cloth, it costs three shillings and sixpence net; in blue leather, with gilt edges, five shillings net.

3. In "Who's Who" occurrences of a later date than August 30, 1904, are not recorded. That the work is an eminently popular one may be guessed from the extraordinary way in which it has expanded of late years. The present issue runs to 1,796 pages of close print. Yet it is a compact and not unwieldy volume. It is in the fullest sense a Biographical Annual.

4. The "Who's Who Year-book" is made up of the tables which were formerly such a popular feature in "Who's Who" itself. These tables were, in fact, the original nucleus of the book, which developed on different lines into a biographical annual. Thus, though the two books are now entirely distinct, there is an underlying connection, and additional details concerning all persons of eminence who are entered in the tables of the Year-Book will be found in "Who's Who."

In the new edition several original tables are included, such, for example, as a list of race meetings with dates of their fixtures and names of the clerks of the course, *tables of leading London specialists* (the italics are ours), and of great London preachers of all denominations—these appear for the first time.

We are sorry to have to criticise unfavourably any detail in a book which must prove so generally useful, but as medical journalists we are bound to protest most emphatically against the lists of "some leading London specialists" which find a place on pages 47 and 48. Just fancy such a footnote as the following, which is appended to a list of "Consulting and Operating Surgeons":—"(1) Especially diseases of lower bowel; (2) especially fractures; (3) especially diseases of the thyroid gland (goître, &c.); (4) especially diseases of the tongue; (5) especially deformities of children; (6) especially surgical diseases of stomach, &c.; (7) especially diseases of joints; (8) especially diseases of liver and gall bladder; (9) especially diseases of breast."

Let us charitably assume that the eminent specialists to whose names these notes are attached have had neither hand nor part in so flagrant an advertisement.

In a list of University Degrees at page 127 there are some inaccuracies and at least two omissions. "B. Eng." is given as the abbreviation for Bachelor of Engineering in the University of Dublin—the correct initials are "B.A.I."—namely, "Baccalaureus in Arte Ingeniariâ." There is a doctorate of Science at Oxford. The degrees in Midwifery and in Dentistry are omitted. The former exist as M.A.O. and B.A.O. in several Universities, the latter as M. Sc. Dent. in Dublin University and as B.D.S. in the University of Birmingham.

5. The best way to begin a notice of this work is to quote the closing paragraph of the editor's preface:—

"There is no excuse now for 'standing idle in the market-place.' Competent women can find work of a skilled sort in home life, and in public life also. Opportunities for training multiply. Everyone is more or less active. But 'in quietness and in confidence shall be your strength.' In quiet study of possibilities, 'without haste, without rest,' our lives must fit into the great world-plan. 'Amusement we have no right to, save as relaxation from strain,' and no work is worth doing which is not strenuous. But hurry and worry hinder good work and cause many of those breakdowns among women which we have to deplore."

The Year-Book contains sections on education, employments and professions, industrial occupations, medicine, science, literature, art, music; sports, pastimes, animals, and social life; public work, philanthropy, temperance, homes and charitable institutions, and religious work.

New articles have been written on Training for Elementary School Teaching, by Miss Isabel Cleghorn; on Education in India, by Miss E. A. Manning; on Laundry Work, by Miss Ethel Jayne; on Journalism for Women, by "Alicia" of the *Daily News*; on Elocution Teaching, by Miss Elsie Fogarty; on Secretarial Work, by Miss Cecil Gradwell; and on Motoring for Women, by Miss N. Bacon.

The Year-Book, replete with information of all kinds, costs only half-a-crown, and should be in the hands of every woman.

One alteration we venture to make to the editor:—Can she not devise a more national or imperial word than "Englishwoman" in the title of the work. We would suggest "The British Year-Book and Directory for Women."

A Self Cure of Stammering, Stuttering, and Indistinct Speech. By EDMUND F. T. BENNETT. London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd. Pp. 23.

MR. BENNETT has done good service to the public in bringing out this pamphlet of sound advice for all those who have been afflicted with the unpleasant scourge of indistinctness of speech. He treats the subject from the most enlightened and enlightening of all possible standpoints—that of personal experience followed by personal success. The *brochure* is "Dedicated to all who can speak and to all who have the power of speech, in memory of a delightful boyhood at Rugby School under the wise, unselfish, and just government of Dr. Temple, and with grateful recollections of the patience and common sense of my master, Mr. E. A. Scott." As the conversation of the stammerer tends to be always painful to himself in the production, and to his audience in the infliction, it is very desirable that the defect should be eliminated. And we have the added interest connected with the condition—and its possible cure—that stammering has been the special infliction of many men of the highest genius. One of the keenest observers of human peculiarities, whose recorded wisdom forms part of the furniture of our own little library, has transmitted to posterity the aphorism that "a stammering man is never a worthless one." We might have suggested to this philosopher—if an opportunity had been afforded—that he is, in some instances, likely to be a somewhat cantankerous one; but let that pass. When his stammer is effectively cured, there will be an aggravating source of irritability permanently dried up. The fact must prove of interest to all students of humanity that the list of famous stutterers includes such names as those of Æsop, prince of (moral) fabulists; Aristotle, prince of philosophers; Demosthenes, prince of orators (strangest record of all); Alcibiades, prince of patriots; Cato (Uticensis). prince of moralists; Virgil, prince of poets; Erasmus, prince of scholars; Cardan, prince of metaphysical physicians; Erasmus Darwin, prince of poetical physicians; and his grandson—Charles, prince of naturalists. The very fact of having such names connected with a certain physical defect should give this a special interest in the mind of every scientific and, more especially, of every medical man. The early fruit of genius has been almost certainly stunted by the drag imposed by this congenital impediment; while its proverbial irritability has, most assuredly, been very much expanded.

Mr. Bennett distinguishes the two classes of sufferers: "The stammerer differs from the stutterer in that he is often unable to produce any sound at all." His first item of advice to the afflicted is, he tells us, a repetition of that which he gave to a young official at a left luggage office who happened to be a bad stammerer. He comforted that individual by assuring him that he himself was once much worse, "and left him with the advice: 'Always shut your mouth before you begin to speak, so that the breath can be taken in through the nose.'" This is the only quotation that we propose to make, as we wish our readers to examine Mr. Bennett's pamphlet for themselves. They will find their time and trouble amply repaid by excellent advice and information on the mechanism and treatment of stammering, stuttering, and indistinct speech.

Malignant Disease of the Larynx. By PHILIP DE SANTI, F.R.C.S. London: Baillière, Tindall & Cox. 1904. Pp. 107.

THE publication of this book has come at a most opportune moment, for in the last few years so many articles have appeared on this subject that it is hard for the practitioner to read all about it and to be sure that his knowledge is up to date. Mr. de Santi has had the assistance of Mr. Butlin and Sir Felix Semon, than whom there are no greater living authorities in this particular branch of surgery, for to them we owe the most advanced practice of operative treatment. The special points worthy of notice—if one may choose out some where all are so good—are:—(1) the note on the lymphatic radicles; (2) the insistence on the difference between "*intrinsic*" and "*extrinsic*" (on this point undoubtedly hangs the whole success of operative interference); (3) the preference for the less severe operation of thyrotomy above the mutilating procedures of partial or complete removal; (4) the very clear and concise account of the various external operative procedures, including preparation and after-treatment; and, finally, the easily comprehended statistics. It only remains to add that no better book on the subject exists, so far as is known to us, nor has any book for a long time given us so much pleasure to read.

The Surgery of Diseases of the Appendix Vermiformis and their Complications. By WILLIAM HENRY BATTLE, F.R.C.S., Surgeon to St. Thomas's Hospital, formerly Surgeon to the Royal Free Hospital, Hunterian Professor of Surgery at the Royal College of Surgeons of England, &c.; and EDRED M. CORNER, M.B., B.C., F.R.C.S., Surgeon in Charge of Out-patients to St. Thomas' Hospital, and Assistant Surgeon to the Great Ormond-street Hospital for Sick Children, Erasmus Wilson Lecturer at the Royal College of Surgeons, &c. London: Archibald Constable & Co., Ltd. 1904. Pp. xii + 208.

FEW subjects in surgery, if indeed any, have been the source of so much literary work as that of the diseases of the appendix and its complications. Some of these effusions are good, both from the literary merit displayed and from the practical teaching they contain, but some—we hesitate not to say it—are poor beyond description from both points of view.

In the work before us the subject is treated in an eminently practical manner—such an one as could only be the outcome of considerable experience combined with careful observation and sound judgment. The whole subject is fully, yet concisely, dealt with, beginning with the history of the affection and terminating with a section devoted to "Selection for Life Insurance," in which rules are formulated which, so far as the authors' opinions are concerned, may be of considerable advantage in assisting medical referees to decide as to the conditions under which applicants for life insurance may be accepted. In formulating these conditions great stress is laid upon whether the appendix has been removed. We heartily congratulate the authors on the production of a work alike sound in its teaching and pleasant to read.

The Guide to South Africa. Edited annually by A. Samler Brown and G. Gordon Brown. 1904-1905 Edition. Twelfth Edition. London: Sampson, Low, Marston, & Co. Capetown, Port Elizabeth, and Johannesburg: J. C. Juta & Co. 1904. 8vo. Pp. lxiv + 477.

Our task in regard to this work is an easy one—to announce the publication of the twelfth edition, and to reiterate the favourable opinion we have long since formed of the "Guide to South Africa."

In their preface the editors point out that the pages referring to South Africa as a health resort comprise all the available information which may be of use to physicians in the choice of residence for their patients. The rapidly-increasing reputation of the climatic conditions of South Africa must, from a home point of view, be greatly enhanced by the facts that the country is almost entirely under British rule, that it offers the means of livelihood to those who are not in an independent position, and that English is spoken practically everywhere. Physicians and invalids are, however, emphatically warned that South Africa is not a suitable place for those who cannot, to a certain extent, shift for themselves. "*To send sick people in the last stages of consumption on a fatiguing journey which leads to places where the unfortunate patient cannot procure proper attention is most certainly wrong.*" These are forcible words, but they are true words, and should be taken to heart by those for whom they are written.

An interesting feature in the book is the series of maps and diagrams which it contains. Altogether we think that the work is indispensable to anyone who intends to visit our South African dominions.

Arteria Uterina Ovarica, the Utero-ovarian Artery, or the Genital Vascular Circle. Anatomy and Physiology, with their application in Diagnosis and Surgical Intervention. By BYRON ROBINSON, B.S., M.D., Chicago, Ill. Chicago: E. H. Colegrove. 1903. Pp. 182, with 117 Illustrations.

THIS work, so far as we can ascertain, is written to emphasise the fact that there is an anastomosis between the uterine and the ovarian artery. To many medical men this fact was already known, but still the author considers that it is so important that he has devoted 180 pages of the most execrable English which it has ever been our lot to read, and some 116 illustrations to the elaboration of it. On the title page, Dr. Robinson tells us that "the object (*sic*) of research is the benefit it may confer and not merely to know the truth." This rather utilitarian doctrine is not, however, supported by the pages that follow, and if it read that "the object of research is to confuse the truth" it would be more applicable. In his preface Dr. Robinson writes—"Numerous dissections, injections, and corrosion anatomy aided by the X-ray has (*sic*) enabled me to confer additional points of interest on the arteria uterina ovarica." We do not for a moment question Dr. Robinson's industry, which has doubtless been very great, but we are of opinion that if he were to divide the pages in his book by ten, and then to write what remained in an intelligible form, his readers would be able to judge for themselves of the value of his work. In the present form of the book, it is impossible to hazard even a guess as to that value.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—SIR THORNLEY STOKER, M.D., F.R.C.S.I.
General Secretary—JAMES CRAIG, M.D., F.R.C.P.I.

SECTION OF SURGERY.

President—ARTHUR CHANCE, P.R.C.S.I.
Sectional Secretary—EDWARD H. TAYLOR, M.D., F.R.C.S.I.

Friday, November 4, 1904.

THE PRESIDENT in the Chair.

Exhibits.

MR. KENNEDY exhibited a patient after nephrectomy, and the diseased kidney which had been removed; also cases of excision of the knee-joint and the elbow-joint.

MR. EDWARD H. TAYLOR exhibited a man, aged thirty-nine, whose left lower extremity he had amputated through the hip-joint for an osteo-sarcoma of the femur; (2) specimens of rectal cancer removed by the trans-sacral and by the combined sacro-abdominal method; also (3) some unusual forms of urinary (bladder) calculi.

MR. R. J. MONTGOMERY exhibited a patient showing the result of operation for ectropion of both lower eyelids.

SIR THOMAS MYLES exhibited (1) some recent cases of gastro-jejunostomy; (2) carcinomatous and tuberculous kidneys removed by nephrectomy; and (3) a large fibroma removed from the region of the lesser peritoneal sac.

Mr. W. S. Haughton exhibited (1) case of omento-hepatopexy; (2) case of excision of astragalus for dislocation of thirteen months' standing; (3) case showing new method of "screwing" fractured olecranon.

Mr. Maunsell exhibited (1) examples of different forms of goitre; and (2) some pathological vermiform appendices.

Mr. J. B. Story exhibited an improved mask to exclude buccal microbes from operation wounds.

Mr. Seton Pringle exhibited an ano-coccygeal tumour.

Mr. A. B. Mitchell (Belfast) exhibited a specimen showing the condition of parts after gastro-jejunostomy, followed subsequently by jejuno-jejunostomy for the relief of regurgitant vomiting.

Inefficient Operations for Gastric Ulcer.

Mr. A. B. Mitchell (Belfast) read a paper based on the results of four different operations, which gave relief for a time, but in all of which the symptoms subsequently recurred.

Case I.—A small ulcer on the anterior wall of the stomach was freely excised. Recovery was rapid, and for about a year the patient remained in excellent health; then the old pain recurred, and though some relief was obtained from drugs and diet, her condition was far from satisfactory.

Case II.—A large ulcer, which had existed for about twelve years, was infolded by a row of continuous sutures, which extended four-fifths round the stomach. The immediate result was all that could be desired, but about eighteen months after operation the symptoms returned, and the patient was soon as bad as ever. A posterior gastro-jejunostomy gave complete and probably permanent relief. The relapse was due to the development of another ulcer higher up in the stomach, all trace of the former ulcer having disappeared.

Case III.—A case of well-marked hour-glass stomach had been treated by gastro-gastrostomy. The patient, who had been a chronic invalid for over twenty years, was promptly restored to health and she remained well for one year, then relapsed. Perforation occurred, and she was operated upon and recovered, and finally a gastro-jejunostomy was done in order to afford permanent relief.

Case IV.—A gastro-duodenostomy was done for relief of long-standing stomach trouble. The immediate result was most satisfactory, but as the symptoms relapsed in about eighteen months, a posterior gastro-jejunostomy was performed with good result.

These cases were placed on record because a true account of unsuccessful operations is essential to a scientific estimate of the best line of surgical treatment. Mr. Mitchell expressed the opinion that permanent relief could not be secured except by an operation that did away with the action of the pyloric sphincter and secured prolonged drainage of the stomach. He now always performed posterior gastro-jejunostomy. He related two cases of regurgitant vomiting. In the first an anastomosis between the ascending and descending loops of jejunum was made, but the result was very disappointing. The patient recovered well from the operation, but got no relief from the vomiting, and died of exhaustion. (Specimen shown.) In the second the bowel was divided, and a Y-operation performed. The result was entirely satisfactory.

Sir Thomas Myles stated that his experience of gastro-jejunostomy for gastric ulcer was small, but he had performed the operation for other conditions, such as pyloric obstruction and malignant disease. He thought it would be a matter of considerable interest in cases where gastro-jejunostomy had been performed for the relief of gastric ulceration with hyperchlorhydria to ascertain the condition of digestion afterwards. For regurgitant vomiting he found relief was usually afforded by propping the patient up in bed. He had never found it necessary to perform a second operation after gastro-jejunostomy, and had operated in sixty-one cases without a death. In order to prevent a spur forming at the site of the gastro-intestinal junction he usually sutured the jejunum along nearly the entire length of the posterior wall of the stomach.

Mr. Mitchell, in reply, stated that experience had led him to prefer gastro-jejunostomy to other operations in cases of gastric ulcer. With regard to regurgitant vomiting, he had observed that when gastro-jejunostomy was done for pyloric obstruction there was never any trouble in this respect, and latterly, when performing gastro-jejunostomy he had been in the habit of puckering in the pylorus with three or four sutures, thus doing away with the action of the pyloric sphincter, and these cases were amongst the most satisfactory which he had had.

The Healing of Wounds: Aseptic v. *Antiseptic Methods.*

MR. W. S. HAUGHTON, after paying a tribute to the greatness of Lister's discovery, said that aseptic technique was the natural outcome of the principles of Listerism. There was no antagonism between antiseptic and aseptic methods, when properly used—*i.e.*, to reinforce each other when special circumstances required. But there was considerable antagonism between the so-called schools arising from the different value each school attributed to the power of chemical germicides, and ordinary cleanliness. His opinion of the leading features of the aseptic surgeon were his appreciation of real cleanliness, his capacity for cleansing and sterilising his operation environment; his ability to maintain the aseptic chain unbroken in a long operation; and his "abstinence" (to use Kocher's own word) from touching sepsis between operations by using rubber gloves for all septic dressings, &c. He then gave Professor Kocher's classification of the channels of wound infection—viz., through air, contact, inoculation, implantation, wound necrosis, and incubation—describing how each might be prevented, and the full details of the technique by which they were prevented. Speaking of skin disinfection, Mr. Haughton gave the results of his own experiments from time to time, the latest being done for him by Dr. Earl, which corroborated those of Kocher, Ahlfeld, Needham, Green and others—setting great value on the hot-water-dilute alcohol method (75–80 per cent.), which was equal, if not superior to, hot-water-sublimate methods, and probably also gave a larger period of safety by hardening the skin. Mr. Haughton advocated rubber gloves in all operations—aseptic and septic—as ligatures were freely infected by drawing them tight across the skin of the operator's fingers, and emphasised their value between operations in dressing or examining septic or mucous surfaces. He further stated that more purely aseptic technique in his own practice gave more ideal healing of wounds. While primary union and absence of fever were the rule in his antiseptic days, they were still the rule in his aseptic technique; but in addition there was an almost complete absence of pain, even in the most extensive procedures, more rapid healing, which was also firmer and developed less fibrous tissue. Furthermore, in accidental wounds, such as compound fractures and lacerated contused wounds, he attained a higher percentage of aseptic healing when these were treated only by scrupulous and prolonged cleansing, using normal warm saline solution instead of any antiseptic germicide. In conclusion, he said the less one relied on chemical germicides, and more on prolonged cleansing, sterilisation by boiling, and warm normal saline solution, the more satisfactory were the results, both to patient and surgeon.

Mr. Lentaigne said that, as to the definition of aseptic and antiseptic surgery, he understood aseptic surgery to mean where nothing went into the wound in the shape of an antiseptic, chemical or otherwise, and antiseptic surgery, where septic processes in wounds had to be fought by the aid of chemical antiseptics. He considered it a matter of impossibility in general surgical practice to avöid occasional contact with sepsis, and accordingly he did not consider one could rely solely on aseptic measures.

Mr. Tobin thought the ideal condition of things would be that in which all surgeons used the same methods. It would be well, too, if surgical nurses were all trained on similar lines. He did not think the danger likely to follow from puncture of rubber gloves during an operation very great.

Professor Bennett agreed with Mr. Haughton as to the advantage of using alcohol as a final disinfectant in cleansing one's hands and the surroundings of a wound. He had found, however, that alcohol applied to the skin of his arms produced severe urticaria; he had found no unpleasant consequences, however, from employing it for his hands.

Colonel M'Neece, R.A.M.C., Sir Thomas Myles, Mr. Wheeler and **Dr. Earl** also discussed the paper.

In reply, **Mr. Haughton** thought that abstinence from sepsis should be the constant aim of the aseptic surgeon, and the best way to do this was by wearing rubber gloves when dealing with septic cases of all kinds. In the treatment of actually septic wounds he thought weak antiseptics were better than those of greater strength, as the latter acted injuriously upon the tissues. He considered alcohol at a strength of 70 per cent. was better than full strength when employed for the hands. He thought silk was an absolutely satisfactory ligature material for burying in wounds, if No. 1 were used. At the conclusion of his paper Mr. Haughton showed a series of lantern slides illustrating various points in aseptic technique.

SECTION OF MEDICINE.

President—W. J. Smyly, M.D., P.R.C.P.I.

Sectional Secretary—R. Travers Smith, M.D., F.R.C.P.I.

Friday, November 11, 1904.

The President in the Chair.

Sporadic Cretinism.

Dr. Kirkpatrick showed a child, aged four, which at the present time weighs 15 ℔s. Two years ago the child was under observation, and then weighed 13 ℔s. The child is greatly emaciated and shows little or no signs of intelligence, and has never made any attempt to speak. The skin is clear and soft, and the hair well grown, the characteristic cretinoid aspect being completely absent. There is no history of congenital syphilis, nor are there any well-marked signs of this condition, and though there are some signs of previously existing rickets, there has been no evidence of the acute stage of this disease while the child was under observation. No trace of the thyroid gland can be detected by palpation in the neck, and during the last fortnight, while the child has been under thyroid treatment, he has shown some signs of improvement. Dr. Kirkpatrick was inclined to look on the case as a rather anomalous one of sporadic cretinism.

Dr. Walter Smith asked was the possibility of rickets with hydrocephalus considered as a diagnosis, as the symptoms would fit in with that ?

Dr. Langford Symes said that one or two possibilities occurred to him. First, rickets. The head was typically rachitic, with large fontanelles and extreme bossing. There was also some beading of the ribs, though there was a lack of the enormous beading one would expect. Second, there was a possibility of some congenital syphilis. The child's teeth were strongly notched. The abdomen was peculiar, being a very large, protuberant one, and the intestines were apparently a good deal matted. The child was also suffering from great marasmus. There was serious mental defect, and probably some hydrocephalus.

Colonel McNeece asked was there any history of consanguinity ? He related a case of two first cousins having married, the parents of one being also first cousins. The first child presented exactly the same appearance as Dr. Kirkpatrick's patient.

Twins were afterwards born, one like the first child, the other healthy. There was no history of syphilis.

Dr. Kirkpatrick said he had thought of rickets and hydrocephalus, but since seeing the child first it had never shown signs of acute rickets, nor was there a history of any acute illness. The condition had developed gradually. Possibly rickets might explain some of the symptoms, but not all. The child was in fairly good health, had no pain, lay quietly in bed, had no fever. He could find no symptoms which would definitely point to congenital syphilis. There was no history of a rash, nor were there any scars on the body. The notching of the teeth went for nothing, as the typical syphilitic teeth occurred in the secondary dentition. Also the child would probably not have remained in its present condition for two years without improving or disimproving. Ten days ago it was put on thyroid extract, and during that period the child had shown signs of improvement. It had shown more intelligence, took more interest in its surroundings, and was more anxious for food.

Exhibition of Patients.

Dr. Travers Smith exhibited the four following patients:—(*a*) A girl, aged ten, looking perfectly healthy, with no history or signs of rheumatic taint. She had never complained of any cardiac symptoms. A strikingly distinct systolic thrill was felt all over the præcordial area, most marked in the region of the pulmonary artery. The thrill corresponded to an exceedingly loud, rough murmur, most audible in the pulmonary area. The right ventricle was slightly enlarged. A diagnosis of some congenital defect of the pulmonary artery leading to slight stenosis was made by Dr. Smith, who also pointed out that, though the cardiac lesion was unquestionably organic in nature, the murmur was diminished by a full inspiration almost to the same degree as one expects in the case of the so-called pulmonary hæmic murmur. (*b*) A middle-aged woman with complete loss of perception of tactile, thermal, and painful sensations in her entire skin. The mucous membranes were not affected. The conditions had existed for a week or more. The diagnosis of hysteria was made. She has since greatly improved. (*c*) A man, aged thirty-five, who had been admitted to the Whitworth Hospital a year previously suffering from left-sided hemiplegia and hemianæsthesia. Thrombosis of the branch of the middle cerebral artery supplying the right internal capsule was diagnosticated, and though a history of syphilis was denied, this was considered the most likely cause. He left hospital after a few weeks very greatly improved. He returned a few weeks ago complaining of typical lightning pains; Argyll-Robertson pupils had developed, and he had slightly impaired sensation in the feet. The knee-jerk on the left side was still greatly exaggerated, and Babinski's sign was present whilst the right knee-jerk was almost completely lost. Ataxia was doubtful, even with severe tests. Tabes dorsalis was now diagnosticated, thereby confirming the suspicion of syphilis. The persistence of the exaggerated left knee-jerk Dr. Smith considered an interesting point in the case. (*d*) An elderly woman, who some months ago developed hemiathetosis affecting the leg, arm, lower part of face, and tongue on right side. There was no history of apoplexy. Dr. Travers Smith had observed her for a fortnight, and came to the conclusion that she was rapidly becoming demented. He considered some variety of cerebral softening to be present.

Caisson Disease.

DR. J. B. COLEMAN made a communication on the subject of caisson disease, as experienced by workers engaged in boring a tunnel for five miles beneath the bed of Lake Erie from and after the year 1897. He mentioned the theories of this disease :—(1) Emboli of nitrogen liberated from the blood in consequence of reduced pressure and so obstructing the small vessels and injuring the nerve elements; (2) the toxic effect of oxygen under high pressure; (3) congestion with either acute revulsive anæmia or comparative stasis. The symptoms came on after rapid decompression of one to three minutes. From ten to six hours after reaching normal pressure the patient suffered excruciating pains, usually in his knees, sometimes in the shoulders and elbows, rarely in his hips; maniacal attacks supervened occasionally; retention of urine was common, and in the severe attacks paralysis of the sphincter ani. Paraplegia occurred and lasted for a few hours to months, and in severe cases persisted with the symptoms of spastic paraplegia; transient facial paralysis was seen; anæsthesia extending up to the ribs was common; an intense feeling of pruritus ("the itch") might occur without pains; bleeding from nose and ears; vertigo, dimness of vision, headache, vomiting, and muscular cramps were other symptoms noted. Urgent attacks of dyspnœa ("the chokes") were frequent, during which the patient felt his lungs over-distended; then a cough was set up, and large quantities of gas, seemingly from the stomach, issued from the mouth. Relief from the joint pains and from retention of urine was obtained by a very hot bath. After work the men felt "wearied and bruised," and on returning to the compressed air they became exhilarated and relieved. Except in the most severe attacks the symptoms always abated on undergoing recompression. The highest pressure was 46 lbs. to the square inch.

Dr. Walter Smith said the interest of the disease centred in its pathology. The first point was the comparatively moderate pressure which produced the disease. It was sometimes laid down that it requires a pressure of three atmospheres, but this patient had worked under considerably less. The second point was the persistence of the effects; this man was regarded as incurable. Thus a difficulty was raised as to the mechanical theory of causation. It had been proved by experiments on animals that gas embolism could occur, but it puzzled him to understand how a mechanical explanation, especially with a gas like nitrogen, could produce such terrible and long-abiding effects. There was, therefore, some other factor. A direct myelitis was set up, and it was possible that a sudden mechanical disturbance of the pressures might cause not only gas embolism, but also an ebb and flow in the vascular condition. It must cause a shock to the nervous elements, and he did not know what might happen to the protoplasm of the nerve elements. Therefore he thought it premature to suppose that the symptoms were caused by gas embolism only. It was well to examine the converse case, and compare the results of over-pressure with under-pressure, as in balloon ascents or mountain sickness. It was known that below a certain pressure a person would die, owing to diminution of the oxygen tension in the arterial blood. It is not the absolute pressure of the gases, but the increased oxygen tension, that is important. There might also be the direct irritant or toxic effect of oxygen gas. As to preventive measures, he thought the method of purifying air and absorbing CO_2 by sodium peroxide should be employed, and the patients should be provided with it.

Dr. Ninian Falkiner asked if the presence of marsh gas could account for the symptoms?

Dr. Travers Smith asked how the purely mechanical theory—namely, that of gas emboli—could be reconciled with the frequent delay of the onset of the symptoms after the return of the workers to normal atmospheric pressure?

Dr. Coleman said that his patient got his symptoms worst when going through strata of marsh gas, but got the "chokes" when there was no obvious presence of that gas. In reference to the comparatively small air pressure which brought on the symptoms, the highest pressure the patient worked under was 46 lbs., about three atmospheres. No theory would satisfactorily explain all the symptoms of the disease, and it was not unlikely that two or three conditions were necessary to bring it about. It was likely that the disease was caused by gaseous emboli of nitrogen acting mechanically, or by oxygen from a direct irritant effect. In reference to therapeutics, he was not aware that peroxide of sodium had been used, but the method of ventilation was to pump in large quantities of fresh air, the air escaping from the lower end of the caisson. His patient found that when the symptoms were coming on they were arrested if he went back into the compressed air. Medical locks were in use in well-regulated works; the men were treated there, and decompression was gradually produced. As to the delay in the onset of symptoms, in some cases they did not come on for hours, though it was likely that any gas which was going to escape from the blood did so almost immediately, but the mischief had already been done to the nerve elements.

Hodgkin's Disease.

Dr. G. Peacocke described two cases of this disease. They occurred in twin boys, aged four. One of them had died eighteen months after the glandular enlargement first appeared. At the time of his death the glands on the right side of the neck and a few in the right axilla were enlarged. The spleen reached as low as the umbilicus. The red cells numbered 1,300,000 per cm.; hæmoglobin, 15 per cent.; white cells, 8,400 per cm.; differential count—lymphocytes, 21 per cent.; polymorphs, 86 per cent. The other boy, whose illness dated from last February, was still alive, and his general condition was satisfactory. Some greatly enlarged glands in the left side of his neck had been removed a few weeks previously. Microscopic examination showed that the enlargement of the glands was due to a general increase of the cellular portion of the glands. His spleen was not enlarged, and a blood count showed red cells, 4,000,000 per cm.; hæmoglobin, 85 per cent.; white cells, 8,500 cm.

SECTION OF OBSTETRICS.

President—Alfred J. Smith, M.B., F.R.C.S.I.
Sectional Secretary—T. Henry Wilson, F.R.C.P.I.

Friday, November 18, 1904.

The President in the Chair.

Exhibits.

Dr. A. J. Horne showed a case of elephantiasis of the leg and vulva.

Dr. W. J. Smyly showed a specimen of cancer of both ovaries. The patient, aged sixty-six, ceased to menstruate at fifty-four. In April, 1904, there was a slight red discharge, which ceased, but came on again in three months. Scrapings from curetting were benign. A small tumour could be felt on each side of the uterus. In November a large ovarian cystoma had formed. Uterus and both ovaries were removed by Doyen's method. He showed a second case which was one of tuberculous pyosalpinx, and in it the uterus and appendages were removed by the same method.

Dr. E. H. Tweedy asked if there were adhesions behind the uterus in these cases, as Doyen employed his operation only for myoma of the uterus. Also, would Dr. Smyly remove pyosalpinx by that method in every case?

Dr. R. D. Purefoy thought the question of diagnosis was interesting. A malignant tumour sometimes simulated pedunculated fibroid very closely. He did not see why the uterus should be removed in every case of removing the tubes. He had found great advantage in operating on these cases from tying the ovarian artery in the infundibular pelvic ligament.

Dr. Kidd thought it too sweeping to say that the uterus should be removed in every case of removal of the tubes. He related a case of pyosalpinx of both tubes, which drained into the uterus from time to time. The patient was too weak to be operated on. She afterwards got perfectly well, and bore a living child.

Dr. A. J. Smith said he used to be content with removing the tubes in tuberculous disease, but then found that patients often came back complaining of pains, which he thought were due to adhesions. In one case he operated again and found a large tuberculous mass, and now he always removed the entire uterus. In ordinary cases of pyosalpinx he had not yet adopted it.

Dr. Purefoy wished to know how one would recognise these cases of tuberculous tubes if he advocated the removal of the entire uterus in these cases only.

Dr. Smyly, in replying, said that in these cases of pyosalpinx, tuberculous or gonorrhœal, the tubes were twisted and surrounded by dense adhesions, rendering it very difficult to get them out. The chances were very much against cases being like Dr. Kidd's, in which there was drainage. His own experience was like Dr. Smith's—that is, having patients coming back after removal of the tubes only—and he thought now that the uterus should be removed in most cases. In the case he had shown there were a lot of adhesions behind the uterus.

The Influence of Fibro-myomata on Pregnancy and Parturition.

Dr. A. J. Horne opened a discussion on this subject.

Dr. W. J. Smyly said that the general impression was that women with fibroids were less likely to conceive than others, but these women were generally sterile long before. The cause of sterility appeared to be the condition of the mucous membrane. Another point was that these women went on bearing children to a later period in life than others, and it was attributed to ovulation and menstruation going on to a later period. His own experience did not either support or contradict these opinions. He thought that these tumours did not often cause obstruction during labour, even when growing low down in the pelvis, as they were usually drawn up out of the way. He related a case in which there was a subperitoneal myoma pushing the peritoneum up and the vaginal mucous membrane down. He had to do Cæsarean section and remove the uterus and tumour. In another case there was an interstitial myoma in the lower uterine segment. The patient went into labour for a few hours, and then labour pains apparently ceased; the pains came on again in a few hours, and the membranes ruptured. She was in labour on and off for a week. The os then allowed two fingers in, and a foot was pulled down, and after a long time the fœtus came away. He thought the chief danger of myomata was during the puerperium. In one case a hospital patient died from *post-partum* hæmorrhage, and, *post mortem*, a submucous myoma was found the size of an orange. He had also found that portions of the membranes were retained sometimes in these cases, which decomposed and caused sepsis. Retained placenta was also common. He did not agree with

Bland Sutton that all myomata should be removed, though the risk of operation was not great.

Dr. Purefoy thought the influence of fibroids in causing sterility was over-rated. An interesting aspect of the question was the greatly increased difficulty in diagnosticating pregnancy in the first three months. If a myoma invaded the cervical region it was most difficult, as he thought the cervix did not undergo the characteristic amount of softening of pregnancy. He related a case in which a fibroid occupied the pelvis, and he did Cæsarean section. A fibroid in the uterine wall also enfeebled the uterine contractions, and they often caused marked interference with the course of labour. He related another case of a primipara, aged thirty, with a fibroid in the lower uterine segment. She went five weeks beyond full term. The presenting part could not be reached, and there was a complete absence of labour. The uterus was removed along with the child, and the patient made a good recovery. Displacement should be done in these cases if possible, and he thought myomectomy was advisable only in the early months of pregnancy. He tabulated these cases in the Rotunda, and notified an absence of *post-partum* hæmorrhage. Most of the patients were women aged between thirty and forty years. He suggested that the occurrence of pregnancy rather hastened the development and increased the size of the tumours.

Dr. E. H. Tweedy related a case in which he had removed the uterus at the fifth month, as the patient could have gone on to full term. As to fibroids causing sterility, he said it was not the fibroids, but the endometritis, that caused it in a certain number of cases. If there was a subperitoneal myoma it would not cause endometritis, and there would be no sterility. Another point was that they might directly cause twisting, or pressing, or stretching of the tubes, which might cause sterility.

Dr. Kidd agreed as to the difficulty of diagnosticating pregnancy in the early months, when associated with myomata. As to sterility, he thought the question was one of comparative and not absolute sterility. He related a case of a primipara, aged forty-four, with two large tumours at the fundus. They caused transverse presentation; version was done. The placenta had to be removed manually. The patient made a good recovery. He had examined the patient since, and found that the tumours had entirely disappeared.

When pregnancy was complicated by cancer, the cancer usually increased rapidly, owing to the hyperæmia. He thought the same increase usually occurred in the case of other tumours under similar circumstances. He related another case in which the tumour sprang from the posterior wall of the supravaginal portion of the cervix. Panhysterectomy was performed, and the patient made a good recovery. In another case in which a tumour was present which could not be lifted out of the pelvis Cæsarean section was performed. Two years later the patient again came into hospital, after she had been in labour for 73 hours. On this occasion it was possible to deliver her with forceps. In another case labour was induced, but soon ceased. A tumour the size of a hen's egg was then enucleated from the cervix; after ten days labour came on again, and the patient delivered herself.

DR. JELLETT said that another aspect of the question was the effect of myomata on the life of the ovum during the last months of pregnancy. Quite recently he had had a case in which death of the fœtus *in utero* apparently resulted from a myoma of the fundus. He saw a patient in February last who was expecting to be delivered about May 1st. She went all through May, and then a myoma the size of a cocoa-nut was found on the anterior wall of the fundus. A dead and macerated child was born on June 3rd, and the placenta was little more than half the normal size. He was interested to know if such a case would be attributed to the myoma, or whether it was a mere accident of pregnancy. If the former, there were two views of the case. First, was the patient's history correct, and should she have been delivered on May 1st, and did the myoma affect the innervation of the uterus and prevent labour coming on at the proper time? Secondly, did the myoma interfere with the development of the placenta? This was probably the correct view. Four months after the labour he found another myoma on the posterior aspect of the fundus, so that there was very little healthy area at the fundus for the placenta. It then became a question of how close the myomata lay to the mucous membrane, as if they lay very close there might not be sufficient room for the uterine sinuses to develop, and hence an insufficient circulation. After a certain period, then, the fœtus would die from interference with the placenta. One cause of sterility in cases of uterine myoma was probably to be found in cystic degeneration of the ovaries.

DR. A. J. SMITH related two cases. The first had a large fibroid tumour, the size of an eight months pregnant uterus. There were no urgent symptoms, but there was no room for a pregnant uterus along with the tumour. He removed the tumour and the following year the patient was delivered of a full term child, and had had four children since. The second case was one of six months' pregnancy, complicated by a large fibroid tumour. There was great distress and dyspnœa, and the tumour was removed along with the pregnant uterus. This was another example of the danger of a large fibroid tumour in pregnancy.

DR. A. J. HORNE, in replying, said he never knew of a primipara aged more than forty-seven. He said there were two questions he had avoided in his paper: first, the diagnosis of fibroids with pregnancy, and, second, their after-effects on the puerperal state. In the case he had with Mr. M'Ardle, the patient was six months pregnant. There was a tumour in the right hypochondrium, which overshadowed the uterus, but there was a distinct line of demarcation. It gave rise to only slight pressure symptoms, and the pregnancy went on to full time. There was a breech presentation. As to *post-partum* hæmorrhage, he had always referred to the danger of it in these cases, but had seen many without it. He did not see how sterility was caused by pressure on the oviducts, as in these cases there was excessive menstruation.

UNSUSPECTED LESIONS IN MOVABLE KIDNEY.

FRANK E. TAYLOR (*Annals of Surgery*, August, 1904, page 215) reports five cases of movable kidney in which, at the operation for fixation, lesions were found in the kidneys which had not been previously suspected. In two of these cases renal calculus was found; in two, tubercular disease, necessitating partial or complete nephrectomy, and in the fifth case there were hydronephrosis and congenital smallness of the ureter. The consideration of these cases shows that a movable kidney is not uncommonly the seat of disease which is unsuspected before exploration. The cases show also the advisableness of bringing movable kidneys out upon the loin when operating, and of thoroughly examining them.—*The Hospital*, December 24, 1904.

SANITARY AND METEOROLOGICAL NOTES.

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Vital Statistics.

For four weeks ending Saturday, December 3, 1904.

IRELAND.

Twenty-two Town Districts.

The average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending December 3, 1904, in the Dublin Registration Area and the twenty-one principal provincial Urban Districts of Ireland was 22.7 per 1,000 of their aggregate population, which for the purposes of these returns is estimated at 1,093,289. The deaths registered in each of the four weeks ended Saturday, December 3, and during the whole of that period in the several districts, alphabetically arranged, correspond to the following annual rates per 1,000 :—

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	Nov. 12	Nov. 19	Nov. 26	Dec. 3			Nov. 12	Nov. 19	Nov. 26	Dec. 3	
22 Town Districts	18.9	21.2	18.8	22.7	20.4	**Lisburn** -	9.1	13.6	27.3	27.3	19.3
Armagh -	20.6	20.6	6.9	13.7	15.5	Londonderry	17.6	16.4	12.6	16.4	15.8
Ballymena	4.8	14.4	4.8	33.5	14.4	**Lurgan** -	35.4	39.8	13.3	13.3	25.4
Belfast -	18.6	19.8	19.6	22.5	20.1	**Newry** -	8.4	12.6	8.4	12.6	10.5
Clonmel -	15.4	46.2	15.4	10.3	21.8	**Newtown-ards**	45.8	17.2	11.4	5.7	20.0
Cork -	21.2	20.5	16.4	14.4	18.1	**Portadown**	20.7	5.2	5.2	25.8	14.2
Drogheda -	24.5	16.3	12.3	8.2	15.3	**Queenstown**	-	13.2	26.4	6.6	11.6
Dublin (Reg. Area) -	20.2	24.2	22.6	27.0	23.5	Sligo -	4.8	33.6	14.4	19.2	18.0
Dundalk -	8.0	12.0	27.9	19.9	17.0	**Tralee** -	-	10.6	15.9	5.3	8.0
Galway -	11.7	31.1	-	50.5	23.3	**Waterford**	17.5	13.6	15.6	21.4	17.0
Kilkenny -	29.5	14.7	4.9	24.6	18.4	Wexford -	23.3	14.0	14.0	28.0	19.8
Limerick -	17.8	21.9	15.0	17.8	18.1						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases, registered in the 22 districts during the week ended Saturday, December 3, 1904, were equal to an annual rate of 2.1 per 1,000, the rates varying from 0.0 in fifteen of the districts to 4.9 in Kilkenny. Among the 155 deaths from all causes in Belfast are 11 from measles, one from whooping-cough, one from simple continued fever, 2 from enteric fever, and 3 from diarrhœal diseases.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of this area is 378,994, that of the City being 293,385, Rathmines 33,203, Pembroke 26,025, Blackrock 8,759, and Kingstown 17,622.

In the Dublin Registration Area the births registered during the week ended December 3, amounted to 232—107 boys and 125 girls; and the deaths to 204—105 males and 99 females.

DEATHS.

The deaths registered represent an annual rate of mortality of 28.1 in every 1,000 of the population. Omitting the deaths (numbering 8) of persons admitted into public institutions from localities outside the area, the rate was 27.0 per 1,000. During the forty-eight weeks ending with Saturday, December 3, the death-rate averaged 24.4, and was 1.3 below the mean rate for the corresponding portions of the ten years 1894-1903.

There were 12 deaths from measles, 3 deaths from whooping-cough, one death from diphtheria, 2 deaths from enteric fever, and 3 deaths from diarrhœal diseases. In the three weeks preceding, deaths from measles were 7, 8, and 12, and deaths from diarrhœal diseases were 5, 5, and 4, respectively.

Three deaths from croupous pneumonia, 5 deaths from broncho-pneumonia, and 11 deaths from *pneumonia* were registered.

The deaths due to tuberculous disease comprise 10 from tubercular phthisis, 19 from *phthisis*, 2 from tubercular meningitis, one from tabes mesenterica, and 10 deaths from other forms of the disease.

Six deaths were ascribed to carcinoma, and 3 to *cancer* (*malignant disease*).

The deaths of 2 infants prematurely born were registered.

Fifteen deaths occurred from diseases of the brain and nervous system; of these, 5 were caused by *convulsions*, 3 of the latter being deaths of infants under one year old.

There were 20 deaths from diseases of the heart and blood-vessels.

Of 40 deaths from diseases of the respiratory system (exclusive of pneumonia), 37 were attributed to bronchitis.

Of 2 deaths from accidental causes, one was that of a child, 3 months old, caused by suffocation in bed.

In 9 instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases include the deaths of 3 children under 5 years of age (including 2 infants under one year old) and the deaths of 3 persons aged 60 years and upwards.

Sixty-six of the persons whose deaths were registered during the week ended December 3 were under 5 years of age (32 being infants under one year, of whom 7 were under one month old), and 55 were aged 60 years and upwards, including 22 persons aged 70 and upwards, of whom 8 were octogenarians, and 2 (females) were stated to have been aged 98 and 103 years, respectively.

The Registrar-General points out that the names of causes of death printed above in italics should be avoided whenever possible in Medical Certificates of the cause of death.

STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

The usual returns of the number of cases of infectious diseases notified under the "Infectious Diseases (Notification) Act, 1899," as set forth in the following table, have been furnished by Sir Charles Cameron, C.B., M.D., Medical Superintendent Officer of Health for the City of Dublin; Mr. Fawcett, Executive Sanitary Officer for Rathmines and Rathgar Urban District; Mr. Manly, Executive Sanitary Officer for Pembroke Urban District; Mr. Heron, Executive Sanitary Officer for Blackrock Urban District; Dr. Byrne Power, Medical Superintendent Officer of Health for Kingstown Urban District; and Dr. Whitaker, Medical Superintendent Officer of Health for the City of Belfast.

TABLE SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfast, during the week ended December 3, 1904, and during each of the preceding three weeks. An asterisk (*) denotes that the disease in question is not notifiable in the District.

CITIES AND URBAN DISTRICTS	Week ending	Small-pox	Measles	Rubella, or German Measles	Scarlet Fever	Typhus	Relapsing Fever	Diphtheria	Membranous Croup	Continued Fever	Typhoid or Enteric Fever	Erysipelas	Varicella	Whooping-cough	Cerebro-spinal Meningitis	Diarrhoeal Diseases	Total
City of Dublin	Nov. 12	–	*	*	4	3	–	5	–	7	8	18	*	*	*	*	45
	Nov. 19	–	*	*	7	–	–	7	–	–	13	12	*	*	*	*	39
	Nov. 26	–	*	*	4	–	–	5	1	1	9	8	*	*	*	*	28
	Dec. 3	–	*	*	7	–	–	4	–	2	10	15	*	*	*	*	38
Rathmines and Rathgar Urban District	Nov. 12	–	*	*	1	–	–	–	–	–	–	–	*	*	*	1	2
	Nov. 19	–	*	*	2	–	–	–	–	–	–	1	*	*	*	–	3
	Nov. 26	–	*	*	3	–	–	–	–	–	1	–	*	*	*	–	4
	Dec. 3	–	*	*	–	–	–	–	–	–	–	3	*	*	*	–	3
Pembroke Urban District	Nov. 12	–	12	–	–	–	–	–	–	–	1	–	–	6	–	*	19
	Nov. 19	–	4	–	3	–	–	–	–	–	1	–	–	–	–	*	8
	Nov. 26	–	1	–	1	–	–	–	–	–	–	1	–	–	–	*	3
	Dec. 3	–	1	–	–	–	–	–	–	–	1	–	–	–	–	*	2
Blackrock Urban District	Nov. 12	–	–	*	–	–	–	–	–	–	–	–	*	*	*	*	–
	Nov. 19	–	–	*	–	–	–	–	–	–	–	–	*	*	*	*	–
	Nov. 26	–	–	*	1	–	–	–	–	–	–	–	*	*	*	*	1
	Dec. 3	–	–	*	–	–	–	–	–	–	–	–	*	*	*	*	–
Kingstown Urban District	Nov. 12	–	*	*	1	–	–	1	–	–	–	–	–	*	*	*	2
	Nov. 19	–	*	*	4	–	–	–	–	–	–	–	–	*	*	*	4
	Nov. 26	–	*	*	–	–	–	–	–	–	–	–	–	*	*	*	–
	Dec. 3	–	*	*	2	–	–	–	–	–	1	–	–	*	*	*	3
City of Belfast	Nov. 12	5	*	*	10	–	–	4	2	19	8	11	*	*	*	*	59
	Nov. 19	1	*	*	15	–	–	10	3	17	13	8	*	*	*	*	67
	Nov. 26	6	*	*	18	–	–	7	2	10	10	5	*	*	*	*	58
	Dec. 3	3	*	*	23	–	–	2	4	6	9	9	*	*	*	*	56

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

Twenty-nine cases of measles were admitted to hospital during the week ended Saturday, December 3, 1904; 28 patients were discharged, there were 4 deaths, and 88 patients remained under treatment at its close.

Twelve cases of scarlet fever were admitted to hospital, 11 were discharged, and 75 cases remained under treatment at the close of the week. This number is exclusive of 9 convalescents still under treatment at Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital, Dublin.

Two cases of typhus were discharged during the week, and one case remained under treatment at its close.

Four cases of diphtheria were admitted to hospital, 3 were discharged, there were 2 deaths, and 29 cases remained under treatment at the close of the week.

Nine cases of enteric fever were admitted to hospital, 4 were discharged, there was one death, and 42 cases remained under treatment in hospital at the close of the week.

In addition to the above-named diseases, 2 cases of pneumonia were admitted to hospital, 4 patients were discharged, and 14 cases remained under treatment at the end of the week.

ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, December 3, in 76 large English towns, including London (in which the rate was 21.7), was equal to an average annual death-rate of 21.6 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 21.2 per 1,000, the rate for Glasgow being 23.9, and for Edinburgh 15.6.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ *N., Long.* 6° 15′ *W., for the Month of November,* 1904.

Mean Height of Barometer,	30.068 inches.
Maximal Height of Barometer (16th, at 7 p.m.),	30.527 ,,
Minimal Height of Barometer (7th, at 9 a.m),	29.440 ,,
Mean Dry-bulb Temperature,	44.1°.
Mean Wet-bulb Temperature,	42.4°.
Mean Dew-point Temperature,	40.3°.
Mean Elastic Force (Tension of Aqueous Vapour),	.257 inch.
Mean Humidity,	87.4 per cent.
Highest Temperature in Shade (on 9th),	59.0°.
Lowest Temperature in Shade (on 22nd),	27.3°.
Lowest Temperature on Grass (Radiation) (22nd),	23.9°.
Mean Amount of Cloud,	59.2 per cent.
Rainfall (on 9 days),	1.077 inches.
Greatest Daily Rainfall (on 6th),	.362 inch.
General Direction of Wind,	W.

Remarks.

Like November, 1903, this month was characterised by a high barometer and a normal temperature. Unlike November, 1903, the rainfall of November, 1904, was much below the average. It is also to be noted that, although the mean temperature of the whole month was just the average, very mild and open weather prevailed until the 19th, when an abrupt change to very winterly conditions took place, the weather becoming cold and frosty, with snow and hail at times, and so continuing till the 28th. The sudden plunge into winter was brought about by the passage south-eastwards of an atmospheric depression which approached the N.W. coasts of the British Isles on Monday, the 21st, travelling thence to Central Europe and increasing all the time in energy. It left the greater portion of Great Britain and Ireland with a deep covering of snow, over which the thermometer fell to 8° at Cambridge on the early morning of the 24th.

The duration of bright sunshine was estimated at 50.75 hours, or a daily average of only 1.69 hours.

In Dublin the arithmetical mean temperature (45.3°) was almost the average (45.4°); the mean dry-bulb readings at 9 a.m. and 9 p.m. were 44.1°. In the forty years ending with 1904, November was coldest in 1878 (M. T. =38.2°), and in 1870 (M. T. = 42.2°); warmest in 1899 (M. T. =50.7°), and in 1881 (M. T. = 50.3°). In 1903 the M. T. was 45.4.°

The mean height of the barometer was 30.068 inches, or 0.208 inch above the corrected average value for November—namely, 29.860 inches. The mercury rose to 30.527 inches at 7 p.m. of the 16th, and fell to 29.440 inches at 9 a.m. of the 7th. The observed range of atmospheric pressure was, therefore, 1.087 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 44.1°, or 6.5° below the value for October, 1904. The arithmetical mean of the maximal and minimal readings was 45.3°, compared with a thirty years' (1871–1900) average of 45.4°. On the 9th the thermometer in the screen rose to 59.0°—wind, W. by S.; on the 22nd the temperature fell to 27.3°—wind, W.N.W. The minimum on the grass was 23.9° on the 22nd.

The rainfall was 1.077 inches on 9 days; the rainfall and the rainy days were much below the average. The average rainfall for November in the thirty-five years, 1866–1900, inclusive, was 2.560 inches, and the average number of rainy days was 17.0. In

1888, 6.459 inches fell on 26 days. On the other hand, the rainfall in 1896 was only .664 inch on 9 days. In 1903 the rainfall was 2.133 inches on 16 days.

High winds were noted on only 4 days, and attained the force of a gale on two days—the 8th and 9th. The atmosphere was more or less foggy in Dublin on the 7th, 12th, 13th, 16th, 17th, 26th and 28th. A solar halo was seen on the 6th. Lunar halos appeared on the 19th and 21st. Sleet or snow fell on the 21st, 22nd, 23rd and 25th ; hail on the 21st, 24th and 25th.

The rainfall in Dublin during the eleven months ending November 30th amounted to 20.678 inches on 172 days, compared with 15.378 inches on 141 days during the same period in 1887, 24.450 inches on 162 days in 1899, 32.736 inches on 196 days in 1900, 24.086 inches on 156 days in 1901, 27.812 inches on 190 days in 1902, 30.015 inches on 212 days in the same period of 1903, and a thirty-five years' average of 25.380 inches on 180 days.

At the Normal Climatological Station in Trinity College, Dublin, the mean height of the barometer was 30.066 inches, the range of atmospheric pressure being from 30.522 inches at 9 a.m. of the 16th to 29.443 inches at 9 a.m. of the 7th. The mean value of the readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 44.6°. The arithmetical mean of the daily maximal and minimal temperatures was 45.3°. The screened thermometers rose to 58.6° on the 9th, and fell to 27.0° on the 22nd. On this latter date the grass minimum was 21.0°, while on the 26th it was 20.9°. On the 5th the black bulb *in vacuo* rose to 92.9°. Rain fell on 9 days to the amount of 1.105 inches, the greatest fall in 24 hours being .390 inch on the 6th. The duration of bright sunshine, according to the Campbell-Stokes recorder was 35.2 hours, of which 5.7 hours occurred on the 12th. The mean daily sunshine was 1.2 hours. The mean temperature of the soil at a depth of one foot was 46.0° at 9 a.m. and 46.1° at 9 p.m. ; at a depth of 4 feet, it was 50.0° at 9 a.m. and 49.9° at 9 p.m.

At Cloneevin, Killiney, Co. Dublin, Mr. Robert O'B. Furlong, C.B., states that 1.29 inches of rain fell on 10 days, compared with a nineteen years' (1885–1903) average of 3.09 inches on 16.2 days. The maximal fall in 24 hours was .41 inch on the 6th, Since January 1, 1904, 20.390 inches of rain have fallen at this station on 166 days. The corresponding figures for 1898 were

26.77 inches on 173 days; for 1899, 27.98 inches on 162 days; for 1900, 33.47 inches on 188 days; for 1901, 26.10 inches on 161 days; for 1902, 30.18 inches on 178 days; and for 1903, 30.05 inches on 203 days. Snow, sleet, or hail fell on the 21st, 23rd and 24th.

Mr. R. Cathcart Dobbs, J.P., reports that at Knockdolian, Greystones, Co. Wicklow, the rainfall was 1.485 inches on 9 days. Of the total quantity .610 inch fell on the 6th, and .425 inch on the 25th. From January 1st, 1904, up to November 30th, rain fell at Greystones on 160 days to the amount of 23.572 inches. The corresponding figures for 1898 were 28.786 inches on 156 days; for 1899, 32.870 inches on 162 days; for 1900, 30.926 inches on 173 days; for 1901, 31.425 inches on 147 days; for 1902, 37.101 inches on 157 days, and for 1903, 33.070 inches on 193 days.

Dr. Arthur S. Goff reports that at Lynton, Dundrum, Co. Dublin, rain fell on 11 days to the amount of 1.26 inches, the greatest measurement in 24 hours being .40 inch on the 6th. In November, 1901, the rainfall was 3.53 inches on 8 days; in 1902, it was 4.61 inches on 17 days; in 1903, 1.93 inches on 14 days. The mean temperature in the shade was 44.9°, the range being from 57° on the 8th and 9th to 27° on the 22nd. Snow fell on the 20th and 21st; snow and hail showers on the 22nd, and hail showers on the 23rd.

Dr. B. H. Steede reports that at the Royal National Hospital for Consumption, Newcastle, Co. Wicklow, the rainfall was 1.341 inches on 10 days, compared with 5.724 inches on 18 days in 1900, 3.196 inches on 13 days in 1901, 5.551 inches on 18 days in 1902, and 2.571 inches on 13 days in 1903. The maximal fall in 24 hours was .502 inch on the 6th. Since January 1, 1904, the rainfall at Newcastle amounted to 27.903 inches on 178 days. The corresponding figures for 1899 were 30.832 inches on 152 days; for 1900, 34.323 inches on 168 days; for 1901, 28.149 inches on 155 days; for 1902, 35.293 inches on 172 days, and for 1903, 38.087 inches on 214 days. On the 3rd the screened thermometers at the Royal National Hospital rose to 58.2°, on the 24th they fell to 27.5°.

At the Ordnance Survey Office, Phœnix Park, Dublin, rain fell on 14 days to the amount of 1.415 inches, the largest measurement in 24 hours being .585 inch on the 6th. The total amount of sunshine was 56.2 hours, the most in one day being 6.9 hours on the 12th.

At the Railway Hotel, Recess, Connemara, Co. Galway, rain fell on 15 days to the amount of 5.175 inches, 1.330 inches being measured on the 6th. Snow and hail fell on the 21st, and a heavy snowstorm prevailed on the 22nd.

In Cork the rainfall was only 1.65 inches, or 2.41 inches below the average for November. There were, however, 14 rainy days. The heaviest fall in 24 hours was .56 inch on the 6th. Up to November 30th, the rainfall of 1904 amounted to 34.46 inches.

Dr. J. Byrne Power, F.R. Met. Soc., D.P.H., Medical Superintendent Officer of Health, Kingstown, reports that the mean temperature at that health resort was 46.2°, being 1.3° below the average for the month during the previous 6 years. The extremes were—highest, 59.2°, on the 15th; lowest, 29°, on the 23rd. At Bournemouth the mean was 44.1°, the extremes being—highest, 58°, on the 10th and 12th; lowest, 26°, on the 26th. The mean daily range of temperature was 9.5°; at Bournemouth it was 11.1°. A frost set in on the 22nd, which, although not severe, was very unusual at Kingstown so early in the season. Between the 22nd and the 27th the thermometer fell to 32° on 5 days, during which days the mean temperature was 35.9°, the absolute lowest being 29°. At Bournemouth the thermometer fell to 32° on 8 consecutive days, the mean temperature for these days being 34°, and the absolute lowest, 26°. The mean temperature of the sea at Sandycove bathing-place was 46.2°, being 1° below the average for the month during the previous 6 years. The relative humidity was 82 per cent., being 2 per cent. above the average for the month during the previous 6 years. The rainfall amounted to 1.30 inches on 8 days, being 1.41 inches below the average for the month during 14 previous years (1873–83 and 1901–03). At Bournemouth the rainfall was 1.19 inches on 9 days. The duration of bright sunshine was 54.9 hours, as compared with 56.2 hours at the Ordnance Survey Office, Phœnix Park, 34.3 hours at Valentia, 42.0 hours at Parsonstown, 48.0 hours at Southport, and 71.0 hours at Eastbourne.

LITERARY NOTE.

The "Scientific Press" announce that they will shortly publish an "Elementary Treatise on the Light Treatment for Nurses," by Dr. James H. Sequeira, Physician in Charge of the Skin Department at the London Hospital.

PERISCOPE.

THE PHYSIOLOGICAL ACTION OF ETHYL ALCOHOL CONSIDERED AS A FOOD.

In a "Research" on this point (*Lancet*, October 22, 1904, page 1132) W. H. Goddard, M.D., B.A. Cantab., concludes, as the result of three classes of experiments on dogs (A., B. and C.), that "when alcohol to the amount of $\frac{1}{150}$th part of the body weight of the animal was administered to it a little more than 5 per cent. of that amount was excreted; and since no aldehyde or other alcohol derivatives are found in the expired air, in the urine, in the blood, or in any part of the body of the animal after death, we may conclude that the remainder—nearly 95 per cent.—is made use of as a food. When, as under Class B., we administer double the quantity of alcohol of that in the previous experiment we find that a little more than 6 per cent. is excreted; and here, for the first time, acetic aldehyde makes its appearance in the expired air. From this we may perhaps conclude it to be the first indication of failure on the part of the animal system to deal with so large a quantity of alcohol, and more especially so since at the same time we find no aldehyde in the urine or elsewhere in the animal body. When, as in the last set of experiments (Class C.), we administer a very large dose we observe that rather more than 49 per cent. of alcohol or its equivalent is excreted. We thus notice an absolute failure on the part of the animal body to utilise about half of the quantity of the alcohol administered. We find that the compounds into which the alcohol has been formed are:—Aldehyde, alkaline acetates, alkaline carbonates, and, we may fairly assume, carbon dioxide and water. In addition to these, however, it is quite possible that other carbon compounds excreted from the animal may exist, but, after most careful investigation, we fail to find them by the chemical means we employ in any appreciable quantity, and therefore we may assume them to be practically absent." "To sum up shortly, in small doses only alcohol is most undoubtedly a food, but, as when large doses are taken, about 50 per cent. of it is excreted from the system it cannot then be considered a food in the proper sense of that term, and if still larger quantities be taken it is more than probable that this contention would apply with even greater force."

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FEBRUARY 1, 1905.

PART I.

ORIGINAL COMMUNICATIONS.

ART. IV.—*Distribution of the Peripheral Nerves.*[a]

By A. FRANCIS DIXON, M.B., Sc.D.; Professor of Anatomy, Trinity College, Dublin.

BEFORE proceeding to the subject of my paper I desire most heartily to thank the members of the Dublin University Biological Association for the honour they have done me in choosing me their President for the coming Session. Knowing well the prominent place that medicine, surgery, and pathology have occupied of recent years in your discussions, I felt diffident in accepting the responsibility of presiding at your meetings. However, as your Council overruled all my objections, I trust that every member of the Association will feel it his duty to help in making our meetings as successful and as attractive as heretofore by bringing to our assistance a special knowledge of those subjects in which your Chairman will be found wanting.

The subject that I wish to speak of is concerned with the way our ideas regarding peripheral nerve distribution have changed during the last ten or fifteen years. During this period careful anatomical investigation, embryological research, physiological experiment, and clinical observation have each done much to revolutionise our conceptions and to advance our knowledge of nerve distribution. There are, indeed, few chapters in anatomy which illustrate to a fuller degree the mutual interdependence of allied studies than that dealing with the nerves.

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[a] Address to the Members of the Dublin University Biological Association, November 24th, 1904.

In what I have to say I shall often be unable to apportion justly the credit of different discoveries, and I regret that for want of time I must omit even to mention the names of very many men to whose work is due great advances in our knowledge. Yet I am hopeful that my subject, though far too vast to treat of in detail, may, on account of its intimate connection with medicine, surgery, pathology, and physiology, prove worthy of our consideration.

Until some fifteen years ago but very little was known about the meaning of the complications in the courses of the nerves, although the various nerves, nerve plexuses, and connections had been minutely and accurately described. The connections and plexuses were assumed to have a physiological importance, and to be responsible—to some extent at least—for bringing the actions of the various muscles of the body into harmony.

About this time the late Professor His published some papers in which he drew marked attention to the fact that in the early human embryo the nerves run almost straight courses from their origins to their terminations. (See Fig. 1.) He showed very clearly that the complications found in the courses of the nerves in the adult arose gradually, and were due to unequal rates of growth in the various parts of the developing embryo and to the consequent bendings of the tissues and the displacements of the organs during their development. He conclusively proved it to be possible to demonstrate that the various organs and parts of the body in the embryo receive their nerve supply from the nerves belonging to the regions in which the organs, or parts, originate, and that the complications in the courses of the nerves in the adult are due to the fact that the various organs and parts during their development often become removed far from the regions where they are first formed.

In each case the organ, or part, retains its original source of nerve supply, and hence the direction and length of the nerves in the adult afford valuable indications of the changes which have taken place in the positions of the parts during development.

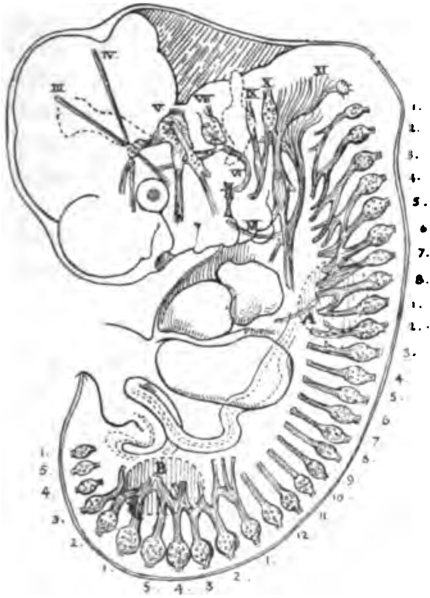


Fig. 1.—Human embryo, four weeks old, showing the distribution of the cranial and spinal nerves. From a drawing by Professor His. *A* and *B* indicate the areas of attachment of the upper and lower limbs.

These observations explained many points regarding the apparently complicated source of the nerve supply to various organs, and threw much light upon such subjects as the nerve supply of the diaphragm, the heart, the testis, the ovary, and many other structures. The gradual development of the complications found in the course of such nerves has been carefully worked out by His and by those who followed him.

It had been established that in the lower vertebrates all the spinal nerves were built upon the same plan, and that each nerve—formed by the junction of its two roots—

divided into a dorsal and ventero-lateral sub-division. The dorsal sub-division had been traced to the skin and muscles of the back; while the ventero-lateral was shown to divide into a larger and more superficial branch for the body wall (somatopleur) and a smaller deeper visceral branch for the supply of the organs derived from the splanchnopleur.

The work of Paterson and others has shown that this type of spinal nerve distribution occurs also in the embryos of higher mammals, including man, and we now know that each spinal or segmental nerve supplies the various structures which arise from the segment to which the nerve belongs—skin, muscle, viscera, and probably also blood vessels. (See Fig. 2.) All the nerves, it is true, do not conform to the type in every detail. The visceral branches appear to be absent in certain segments, and the nerves passing to the alimentary canal—to join, for instance, the plexus of Auerbach or the semi-lunar ganglia—exhibit anatomically no segmental characters in their distribution. The observations of clinicians have, however, amply demonstrated the segmental character of spinal nerve distribution in man, even in those minute details where anatomical and embryological investigations might have afforded merely a ground-work for guessing at the actual arrangements.

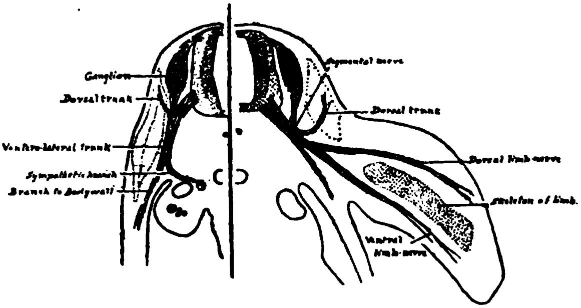


FIG. 2.—Diagrammatic transverse section of an embryo, showing the plan of distribution of a segmental nerve. On the right hand side of the figure the section passes through the developing arm.

For a long time it has been recognised that in disease of the internal organs pain is experienced in certain skin areas. These "referred" pains, or "sympathies," were first carefully described and arranged by Head, and he demonstrated most clearly that the reference was segmental in character. Each viscus is found to be in relation to a definite skin patch, both being derived from the same segment or segments, and both being therefore, supplied by the same segmental nerve or nerves. Hence the pain is often referred by the patient not to the actual distribution of the branch stimulated, but to the skin area corresponding to the segmental nerve supplying the viscus. We find, for instance, that disease of the kidney or of the ureter gives rise to referred pain in the cutaneous distribution of the tenth, eleventh, and twelfth thoracic nerves; disease of the ovary to pain in the tenth thoracic cutaneous area, and disease of the cardiac part of the stomach to pain in the sixth and seventh thoracic areas. (See Fig. 3.) In such cases the pain is referred to the skin areas of the nerves supplying the organs, the stimulation or excitation of the visceral being referred to the somatic area of the same segment. Further, as one might expect, it has been noted clinically that the skin areas of those nerves which can be shown anatomically to have no visceral branches are not subject to referred pain. Our ideas, therefore, regarding the type of segmental distribution have been confirmed and extended in a most remarkable manner by clinical observations.

Numerous observations, carefully collected and arranged, enabled Head to map out accurately the zones of skin corresponding to the sensory distributions of the segmental nerves, and Sherrington's results, obtained by physiological experiments on lower animals, are in complete agreement with those of Head. Sherrington, in making his observations, divided the dorsal nerve roots above and below the segmental nerve, whose distribution he wished to study, and in this way, with extreme accuracy, he was able to map out as an island of skin the area which remained capable of response to stimulation. The area so marked out corresponded to the distribution of the nerve under investigation which had been left intact.

This method of experiment was found necessary since in apes division of the dorsal root of a single nerve does not cause absolute loss of tactile sensation in any area of the skin, owing to the fact that the zones, corresponding to the distribution of the nerves, overlap to such an extent that every spot on the skin is supplied by more than one segmental nerve.

It is most interesting to note that in man this overlapping of the skin areas corresponding to the various spinal nerves is probably but slight, or sometimes possibly absent. Sir Victor Horsley records that in cases where he has been called upon to divide one or more posterior nerve roots, for severe hyperæthesia of the skin, a sharply defined area with total loss of sensation has resulted. A similar want of correspondence between the results obtained by Sherrington in apes and those observed in man has been made out in the region of the distribution of the fifth cranial nerve. In apes, according to Sherrington; the area of overlap of the mandibular branch of the fifth nerve and the second and third cervical nerves is very extensive. In man, on the other hand, according to both Cushing and Horsley, such overlap is slight or practically absent. In this connection Cushing suggests that "through the greater accuracy of the tests which are possible in the human subject, the exact anatomical delineation of a segmental skin-field may be determined, after section of its dorsal root, regardless of the possible functional overlap with adjoining segments." This question of overlap is one of very great interest, and the difference noticed by these observers between man and apes should make us very careful in adopting conclusions based only upon one source or class of evidence.

An account of the actual distribution of the spinal or segmental nerves supplying the skin of the upper limb in man was published by Herrington as long ago as 1886, and his results, obtained by careful dissection and disentangling of the nerve plexuses, have since been confirmed, corrected, and extended by other investigators employing different methods.

The two outlines which I show (Fig. 3, *A.* and *B.*) illustrate diagrammatically what we believe to be the manner in which the nerves in man are distributed to the skin. We see that the skin of the trunk is made up of a series of zones, each of which is supplied by its own segmental nerve, and that these zones or dermatomes always follow one another in numerical order. When we look at the trunk from behind we note two districts where certain nerves fail to reach the surface, and hence in these regions we find contiguous areas which are not supplied by immediately consecutive nerves. These areas correspond to the middle points of attachment of the limbs, and the nerves whose posterior primary divisions fail to reach the surface are the lower cervical and the lower lumbar nerves. A like interruption in the consecutive zonular distribution of the nerves is also present in front, and it is caused in both cases by the presence of the limbs, which, as they grow out from the side of the body, take with them the nearest nerves. The nerves opposite the middle of the limb remain deeply placed, and come to the surface only near the limb termination, while some of the nerves above and below are, in each case, drawn in to supply the proximal part of the limb.

In two regions, then, the zonular distribution of the segmental nerves has become complicated in the adult, owing to the outgrowths of the tissues which, during embryonic development, give rise to the limbs. In another region of the body the zonular arrangement has become masked from quite a different cause. At the hind end of the body with the rounding off of the region behind, that is, post-axial to, the attachment of the lower limbs, and with the disappearance of the tail as a projection, the skin areas, or dermatomes, which originally presented a zonular disposition, have assumed the appearance of a series of irregular concentric circles around the apex of the coccyx. The nerve supply of this district has recently been most carefully investigated by Cushing in cases of perineal zoster, and his results, which are most complete, and in full accord with embryological considera-

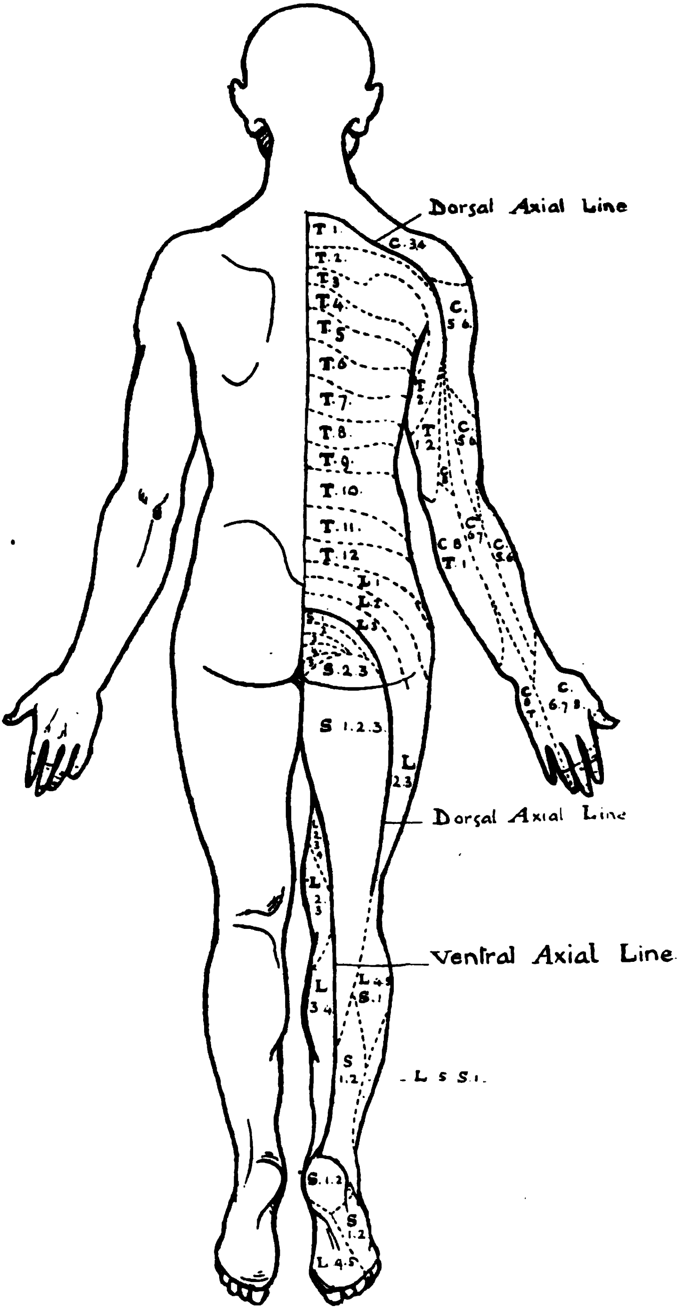
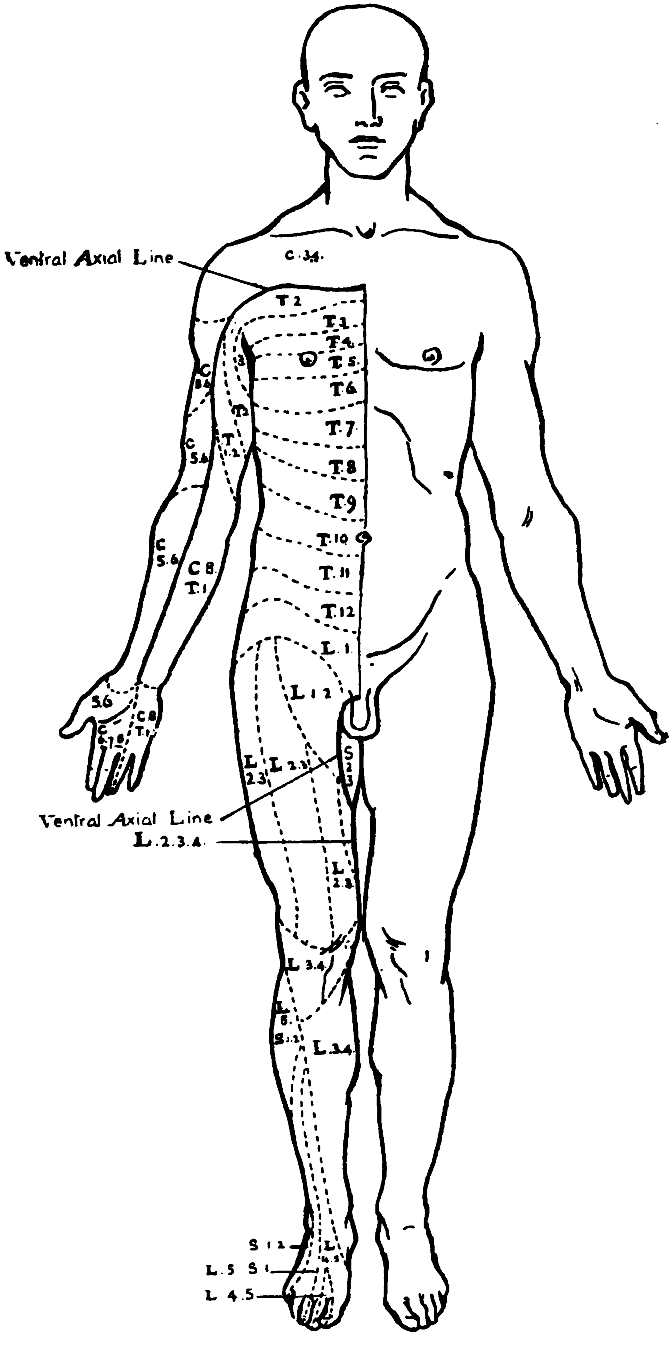


FIG. 3, *A* and *B*.—Diagrams to illustrate the distribution of the cutaneous
trunk the illustrations of Head have been made use of, and on the
The regions where the regular numerical sequence of the cutaneous
" ventral axial lines."



branches of the spinal nerves. In mapping out the areas on the limbs those of Paterson.
nerves is interrupted correspond to the lines marked "dorsal" and

tions, are given in the figure which I now show, taken from his paper. (See Fig. 4.)

The cutaneous distribution of the segmental nerves is so extremely regular that it has been found possible to

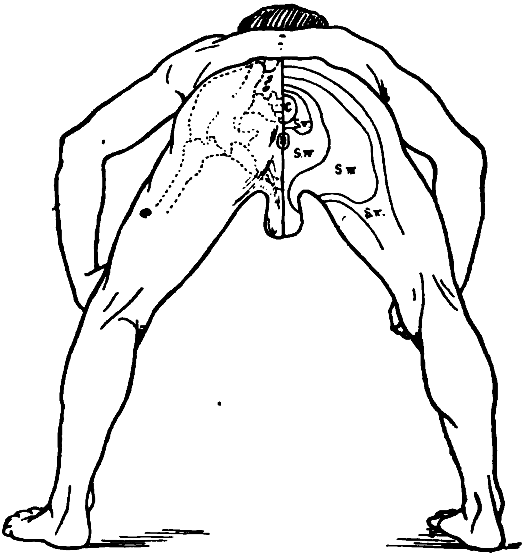


FIG. 4.—Cutaneous distribution of the nerves in the perineal region.—*Cushing.*

formulate certain laws regarding the nerve supply of the trunk and limbs. For instance, it will be seen that of two points on the radial, tibial, or preaxial border of either limb the point which lies higher will be supplied by the higher nerve, while in the case of two points on the post-axial border, the point which is higher will be found to be supplied by the lower nerve. (See Fig. 3.)

In regard, then, to the cutaneous nerves, the nerve-plexuses appear to have merely an anatomical, not a physiological, importance—the fibres of the various spinal nerves becoming sorted out and disentangled before they reach their endings in the skin. The areas to which the segmental or spinal nerves are distributed are arranged in the same numerical order from above downwards as are the spinal nerves themselves; and this is found to be the case even in such parts as the limbs, where unequal growth, bending, and rotation have all tended during embryonic development to introduce complications and to mask the primitive and more simple conditions.

In the case of the motor fibres of the segmental nerves, the careful dissections of Herrington, the experiments of Ferrier, and the numerous clinical observations collected by Gowers, Thorburn, and many others have shown that it is possible to determine in very many cases the actual segmental nerve or nerves which supply the individual muscles. The segmental nerve supply of the muscles has naturally received much attention on account of its great importance in enabling the surgeon or physician to locate lesions involving the nerve roots.

It can be clearly shown that in the embryo each segmental nerve supplies the muscles developed in the segment to which it belongs. Relatively, very few of the muscles in the body are, however, found to have their embryonic origin in a single segment—that is, to be monomeric. The vast majority are developed from two or more segments—that is, are polymeric. Hence we find that it is rare for a muscle to have its nerve supply drawn entirely from any one segmental nerve. With the motor, as with the sensory nerves, the greatest difficulties in recognising their typical segmental distribution are met with in the limbs. Yet even in the limbs of the adult it has been found possible to demonstrate traces of the more primitive and simple embryonic conditions.

It is well known that in the embryo the nerves, as they enter the lateral bud which develops into the limb, divide into dorsal and ventral branches. The dorsal branches, lying dorsal to the skeleton of the limb, supply the muscles and skin on the dorsal or primitive extensor aspect, while the ventral branches supply the skin and muscles on the primitive ventral or flexor aspect. The figure (Fig. 2) which I show illustrates this arrangement in a somewhat diagrammatic manner. Bolk has shown that it is possible to demonstrate this arrangement in the adult, in spite of the fact that the unequal growth and the rotation which the limbs have experienced during development have done much to render the primitive arrangement obscure. The diagram (Fig. 5, *A.*) illustrates what one would expect to find in a transverse section if the primitive conditions were retained, and the next figure (Fig. 5, *B.*) illustrates the outline of an actual transverse section in which lines have been so drawn as to mark out the muscles and parts of muscles supplied by the segmental nerves which enter the limb. We note at once that the nerves are distributed by dorsal and ventral branches, and that in each case these branches are arranged, like the nerves from which they are derived, in numerical sequence. Hence the motor fibres of the segmental nerves, like the sensory, become sorted out and disentangled after they have passed through the plexus, and are distributed in the same order as that in which they arise from the spinal cord. The plexus, in the case of both the motor and the sensory nerve fibres, may be compared with a tangle involving a number of cords, the

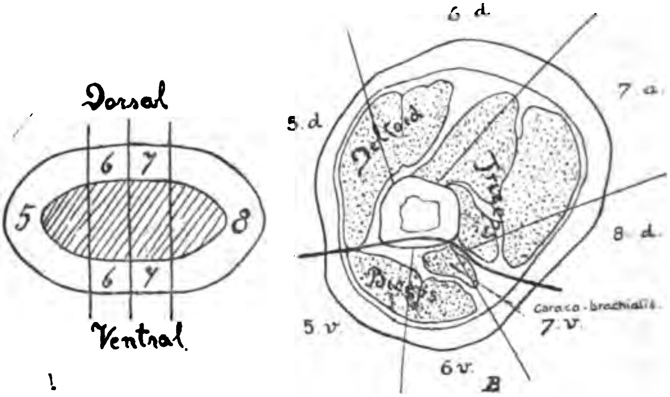


FIG. 5.—*A.* Diagrammatic transverse section of the arm. The numbers 5–8 indicate the parts supplied by the corresponding nerves which are found to be distributed by dorsal and ventral branches. Compare Fig. 2, right side.

B. Transverse section of the arm. The black line marks the separation of the portion supplied by dorsal from that supplied by the ventral limb nerves. The finer lines mark off the parts supplied by the various dorsal and ventral branches of the limb nerves. The outlines are from figures given by Bolk.

cords being found, however, both to enter and to leave the tangle in a regular consecutive order. The nerve plexuses of the limbs may then be regarded as expressions of the numerous changes and complications introduced during the course of the development of the limbs, and probably have no physiological significance.

Let us now inquire whether it has been found possible to establish for the cranial nerves a type of distribution at all comparable with that which has been proved to exist in the case of the spinal segmental nerves. Here we are confronted with a subject which has received much attention, and concerning which most conflicting views are held. Indeed the number of papers written about the cranial nerves in man and lower animals is almost overwhelming, and it is impossible to give even a slight idea of the various views held by the different writers.

In the head we have to do with the motor and sensory nerves, and some of these, at all events, appear in the embryo to arise in fundamentally the same manner as the segmental nerves of the trunk. Although certain of the cranial nerves at first sight do appear to resemble spinal nerves both in regard to their formation and their mode of attachment to the brain, it would seem to be wiser, with our present knowledge, to be careful not to push the comparison too far, and for the most part to content ourselves with considering the cranial nerves by themselves.

Observations on the developing head in lower animals have shown that three myotomes, or muscle segments, appear in the anterior part of the head, and that from them are developed the muscles of the eyeball. The first of these muscle segments is believed to give origin to the muscles supplied by the third nerve, the second to the superior oblique muscle supplied by the fourth nerve, and the third to the external rectus muscle supplied by the sixth nerve. If this view be correct the third, fourth and sixth nerves probably represent the motor fibres of the most anterior segmental nerves.

In the posterior part of the head, also, muscle segments, or myotomes, are present in the embryos of lower animals, and from them arise the muscles of the tongue. It is believed that at least four such segments are present, and if this number be accurate we may probably regard the hypoglossal nerve as representing the fused motor portions of at least four segmental nerves.

Omitting, then, these purely motor cranial nerves, there remain for consideration the fifth, seventh, ninth, tenth, and eleventh, together with the nerves of hearing, sight, and smell. Omitting the spinal accessory, the former group of nerves (five, seven, nine, and ten) is in lower mammals largely concerned in the supply of the pre-oral and post-oral branchial clefts and gill arches. Comparative anatomists, as a result of the study of a very large number of groups of animals, both in the adult and embryonic conditions, have arrived at the conclusion that the mode of distribution of these branchial nerves can be reduced to a common type, although there is still considerable doubt whether the nerves themselves are to be regarded as segmental or inter-segmental, and the muscles which they supply as somatic or splanchnic. In spite, however, of all doubts and difficulties, it can be shown that the typical mode of distribution of the branchial nerves is as follows (see Fig. 6):—Each nerve passes to the dorsal end of one of the gill clefts and there divides into two main branches, one of which passes ventrally in the arch

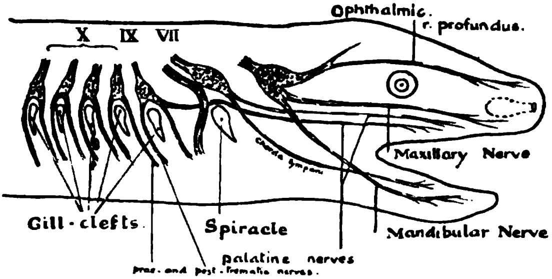


FIG. 6.—Diagrammatic representation of the cranial nerves in lower vertebrates. The nerves which are not present in higher forms are omitted in the diagram. The figure is founded on an illustration of Wiedersheim's. The nerve marked "chorda tympani" is believed to represent the nerve so called in higher forms.

in front of the cleft, the other in the arch behind (prætrematic and post-trematic nerves). In addition each nerve gives off a branch, usually of small size, which passes inwards towards the dorsal aspect of the alimentary canal. Each branchial arch, therefore, is supplied by two nerves, one along its anterior margin and another along its posterior margin, these nerves being branches of consecutive branchial nerves. The branchial nerves are both motor and sensory, and arise by two roots just as the typical spinal nerves do, and, as in the latter, a ganglion is present on the more dorsal or sensory root.

Many attempts have been made by various authors to apply such a scheme of distribution to the corresponding nerves in man, and indeed the seventh and ninth nerves in

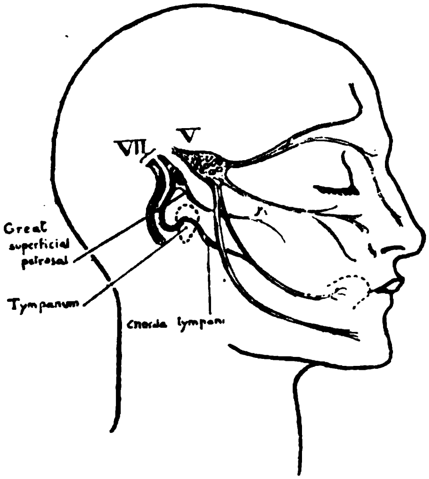


Fig. 7.—Diagrammatic representation of the fifth and seventh cranial nerves in man, for comparison with Fig. 6. The great superficial petrosal appears to represent the palatine branch of seventh nerve in lower forms.

the human embryo appear to be distributed in a manner comparable with typical branchial nerves in lower forms, though serious difficulties are met with in the case of the tenth nerve. As the vagus appears to be formed by the fusion of a number of branchial nerves belonging to the posterior clefts and arches we can understand why it supplies the heart, larynx, and lung, but no satisfactory reason has been given for its distribution to the stomach, or to the skin at the external auditory meatus.

On the whole, we must confess our knowledge to be at present so incomplete that we have merely an indication of the existence of some such plan of distribution in the case of these branchial nerves in man and other mammals. Even in lower forms many complications and difficulties are present, and until these are explained we shall probably have to wait for information regarding the conditions in man.

The explanation of these nerves is of practical interest, and would undoubtedly throw much light on many points regarding the nerve supply of various parts of the mouth and pharynx, and assist in determining the sources of the nerves for some muscles concerning which at present doubt exists.

Within recent years surgeons, by removal of the Gasserian ganglion and the fifth nerve roots, in cases of trigeminal neuralgia, have afforded opportunities for precise observations concerning the actual distribution of this nerve in man. Krause, Lynn Thomas, Cushing, and others have in such cases carefully mapped out the areas of anæsthesia, and the recent papers of Cushing on this subject probably give us the most accurate pictures as yet available of the sensory distribution of this great nerve both on the face and in the mouth, and in the nose, and in the pharynx. (See Fig. 8.) It is most satisfactory to note that, as regards the surface of the face and head, the minute anatomical dissections of Frohse enabled him almost quite accurately to map out the sensory field of the fifth nerve, and Cushing remarks that the outline given by Frohse in one of his figures is practically the counterpart of the skin-field demarcated in the great majority of his cases of trigeminal neurectomy. In the region of the upper part of the helix alone does any discrepancy exist. In the hands of observers like Cushing such neurectomies are certain to yield most valuable information regarding nerve distribution, as the difficulties of interpreting the results of stimulation, although great, are not to be compared with those met with when lower animals are experimented upon.

During the years that such conceptions as I have tried to indicate have been forming an idea has taken deep root in the minds of those who are devoting themselves to the study of the nervous system. This idea has found expression in the neuron hypothesis first definitely formulated by Waldeyer in 1891.

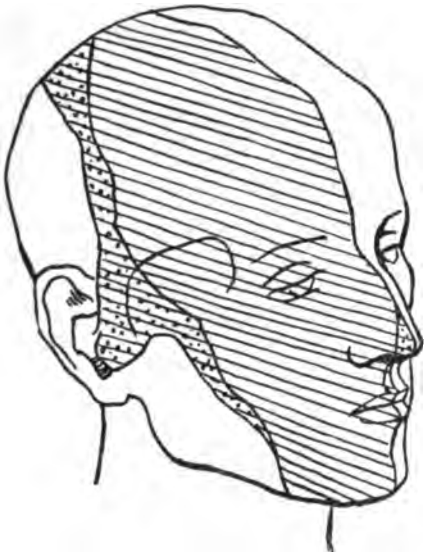


Fig. 8.—Cutaneous distribution of the trifacial nerve in man as determined by Cushing. Over the dotted areas sensation was not completely lost, but painful sensations were interpreted as tactile sensations.—*Cushing.*

According to this hypothesis the nervous system consists of innumerable nerve units, or neurons, which are embryologically quite distinct from one another, and which retain their independence even in the adult. Each neuron is composed of a cell body and its processes, the long processes being the axons or axis cylinders, and the shorter ones the dentritic processes. In no case do the processes of one neuron anastomose with those of another—the parts of one neuron simply touching, without joining, those of others. The entire nervous system is composed of neurons, no other elements entering into its composition.

The fibres comprising the nerves whose distribution we have been considering are, according to the neuron hypothesis, processes or portions of cells either within the spinal cord or brain, or in the ganglia of the nerve roots.

This neuron hypothesis received strong support from the work of many embryologists, and, above all, from that of the late Professor His. He believed that it was possible, in the embryo, to demonstrate that each nerve fibre arose as an outgrowth from a single cell, or neuroblast, and hence the neuroblasts of the embryo became identified with the neurons of the adult. (See Fig. 9.) Many physiologists and pathologists accepted the hypothesis, as it appeared to afford a valuable key to the working of the nervous system in health and in disease, and to throw much light upon the course and limitations of degeneration and regeneration of nerves in cases of injury.

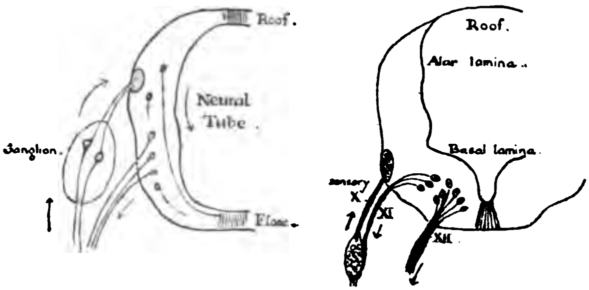


FIG. 9.—Diagrams illustrating the origins of the nerves as outgrowths from the neuroblasts within the wall of the neural tube, and from the cells within the ganglia of the posterior nerve roots. From drawings by Professor His.

The conception of the nerve unit, or neuron, by affording an explanation of many previously more or less isolated observations, undoubtedly has done much to elucidate our ideas regarding the structure and working of the nervous system. At the same time it seems certain that the hypothesis, if it is to receive continued acceptance, must be profoundly modified. Ever since its enunciation various investigators have refused to accept certain observations and deductions made by its supporters, yet, although many points have been in dispute, the hypothesis as a whole can hardly be said to have come into real danger until within the last few years. At the present moment, however, in spite of its wide acceptance by a large body of workers, we find that practically every essential point in the hypothesis is being assailed by some well-known observer.

We are told that the neuroblasts do not produce the nerve fibres in the manner described by His, but that, as Balfour, Dohrn, Kupffer, and others stated, the nerves arise by the fusion of chains of cells in the embryo. It is difficult to decide the question, but with our present knowledge a multicellular origin of the nerve fibres appears to be extremely probable in the embryo. (See Fig. 10.) The recent work of Bethe almost compels us to regard the nerves as multicellular structures, and he brings forward very strong evidence to show that each axis cylinder is derived from as many cells as there are nodes of Ranvier in its course.

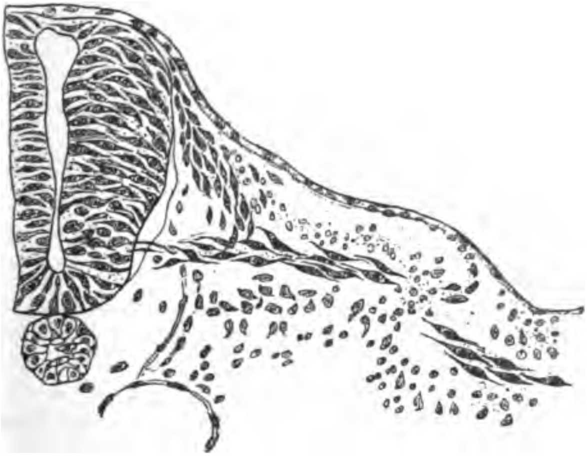


Fig. 10.—Section of a developing chick embryo, showing the origin of the nerves as multicellular structures. The nerves are represented at this stage of their development by chains of spindle-shaped cells.—*Bethe.*

In the adult it is now known that the processes of the neurons of lower animals freely communicate and anastomose, and that in vertebrates the nerve cells of the sympathetic system, which supply the blood vessels, are often continuous with one another by their branching processes, and, further, that an axis cylinder process may arise from the connecting network, and so apparently not belong to one cell rather than to another. New and improved methods of staining have revealed the fact that within the nerve cells and the axis cylinders there are numerous fibrils which are not confined to any one neuron, but which traverse the cells and fibres, passing freely in a branching manner from one cell and its processes to another. (See Fig. 11.) These fibrils have been studied

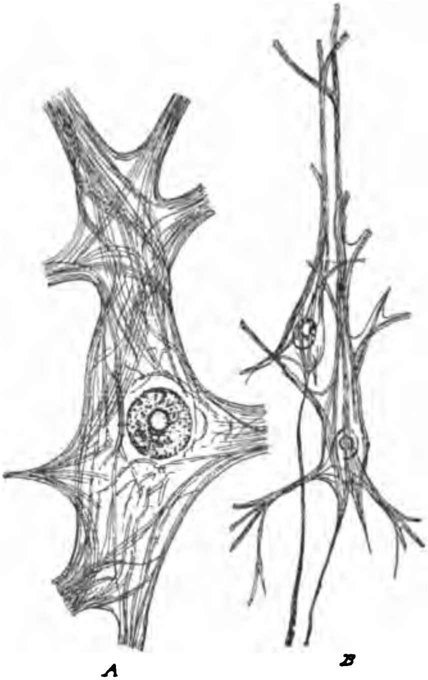


FIG. 11.—The fibrils within the nerve cells and their processes:—*A*. represents a cell from the anterior horn of gray matter; *B*. two pyramidal cells.—*Bethe*.

within recent years, more especially by Apathy, Dogiel, Nissl, Bethe, and others, and there is much evidence to show that they are the real conducting elements, and that they arise as a product of the cells in which they are found. The ganglionic cells have come to be regarded by some observers as depôts in which the fibrils become spread out, re-arranged and changed in direction. The illustrations which I show, taken from papers by Bethe, will exhibit what he believes to be the arrangement of these fibrils.

The neuron hypothesis has been attacked also from the pathological and experimental side. Nerve degenerations are believed not always to be limited exactly as they should be according to the hypothesis, and, further, Ballance and Stewart, Bethe, Kennedy, and others maintain that nerve fibres will regenerate *in situ* even while separated from the ganglionic cells with which they are normally connected.

There still exists much doubt, and we have very much to learn, regarding the actual structure and the connections of the elements composing the nerves, but at the present moment the weight of evidence tends to show that the nerve fibres arise as multicellular structures in the embryo, that the axis cylinder is multicellular in the adult, that the fibrils are probably the conducting elements of the nerve fibres, and that they probably pass freely from cell to cell within the nervous system. With the advance of our knowledge regarding the fibrils the conception of the neuron becomes of less importance. If the views of the authors referred to in this paper prove to be correct the neuron can no longer be regarded as a nerve unit, yet probably we shall continue to speak of "neurons," recognising them to be complex structures which do not in every case possess the same morphological value.

During the last fifteen years our ideas regarding the peripheral nerves have been simplified by the establishment of types of distribution. The importance of the segmental distribution of the nerves has been demonstrated, and the circuitous paths pursued by the nerve fibres on their way to skin, muscles and viscera have been shown to have probably no physiological significance, but to be due to complications which have taken place during development.

During this time, also, the neuron hypothesis has been developed, and having in its original form served a most useful function in systematising our ideas regarding the nervous system, it is probable that it must now be fundamentally modified.

Art. V.—*The Principal Results of the Census of the United Kingdom in* 1901.[a] By R. E. Matheson, LL.D., Barrister-at-Law, Registrar-General for Ireland.

In rising to deliver the opening Address of the Session, I desire in the first place to return my grateful acknowledgments and best thanks to the Statistical and Social Inquiry Society of Ireland for the honour they have done me in electing me to the post of President of the Society, an office which has been filled by many distinguished Irishmen, and the dignity of which has been so well upheld by the outgoing President, Mr. Commissioner Bailey.

I have selected as my subject "The Principal Results of the Census of the United Kingdom in 1901."

The Census was taken in England and Scotland under the Census (Great Britain) Act, 1900, which applied equally to England and Wales, and Scotland. Under this Statute particulars were obtained regarding Houses; the Sex, Age, Condition as to Marriage, Occupation, Birthplace, Nationality, and certain Infirmities of the Population; also the number of Persons speaking Welsh in Wales and Monmouthshire, and of Persons speaking Gaelic in Scotland.

Under the Census (Ireland) Act, 1900, the enumeration was of a much more extended character, and embraced in addition to the subjects inquired into in England and Scotland, Religious Profession, Education, Schools, Agricultural Holdings, and Sickness.

I propose to deal first with those heads which are common to the three countries, then to discuss the branches of inquiry peculiar to Ireland, and lastly to refer to those subjects introduced in the Census Publications, regarding which the information was obtained from other Government Departments.

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[a] Presidential Address read before the Statistical and Social Inquiry Society of Ireland, November 25th, 1904.

I. SUBJECTS OF INQUIRY COMMON TO THE THREE COUNTRIES.

Population.

The population of the United Kingdom, which in 1891 amounted to 37,732,922, had risen in 1901 to 41,458,721—an increase of 9.9 per cent.

The population of England and Wales increased during the decade from 29,002,525 to 32,527,843, or 12.2 per cent.; and that of Scotland from 4,025,647 to 4,472,103, or 11.1 per cent.; while the population of Ireland fell during the ten years from 4,704,750 in 1891 to 4,458,775 in 1901, being a decrease of 5.2 per cent.

Analysing the figures for local areas we find that in 45 Registration Counties of England and Wales the population increased in 1901 as compared with 1891, the rates of increase ranging from 45.11 per cent. in Middlesex to 0.003 in Cornwall; and that in the 10 remaining Registration Counties there was a decrease during the decennium ranging from 7.04 per cent. in Huntingdonshire to 0.17 in Brecknockshire.

The figures for the Counties of Scotland show an increase of population in 18 Counties, ranging from 24.43 per cent. in Linlithgow to 0.90 per cent. in Perth. In 15 Counties there was a decrease varying from 15.78 per cent. in Selkirk to 0.02 per cent. in Inverness.

An examination of the figures for the Counties of Ireland, as constituted under the Local Government (Ireland) Act, 1898, shows that there was a decline in the population of all the Counties except Dublin; the percentage of fall ranging from 13.45 in Monaghan to 5.69 in Wicklow.

It is remarkable that amongst the 8 Counties in which the percentage of decrease is greatest are found Monaghan, Cavan, Tyrone, Londonderry and Fermanagh in the Province of Ulster. The population of the County of Dublin increased 6.31 per cent. during the decade, and each of the six County Boroughs shows an increase, ranging from 27.82 per cent. in Belfast to 1.03 in Cork.

Density of Population.

The average number of persons per square mile (including land and inland water, but exclusive of tidal water and foreshore) in 1901 was, in England and Wales, 558; in Scotland, 147; and in Ireland, 138.

In England and Wales the number of acres per person in 1901 was 1.15, in Scotland it was 4.4, and in Ireland 4.6.

HOUSES.

Inhabited Houses.

The Inhabited Houses in the United Kingdom in 1901 were 8,045,924, against 7,139,643 in 1891, being an increase of 906,281, or 12.7 per cent.

The number of Inhabited Houses in England and Wales in 1901 was 6,260,852, as against 5,451,497 in 1891, showing an increase of 809,355, or 14.87 per cent.

In Scotland the Inhabited Houses in 1901 reached a total of 926,914, whereas in 1891 they were only 817,568, showing an increase of 109,346, or 13.4 per cent., during the decennium.

The number of Inhabited Houses in Ireland in 1901 was 858,158, as compared with 870,578 in 1891, being a decrease of 12,420, or 1.4 per cent.

House Classification.

In Ireland in 1901 the houses were, as on previous occasions, divided into four classes, the lowest or fourth class comprising houses built of mud or perishable material, having only one room and window; the third a better description of house, varying from one to four rooms and windows; the second what might be considered a good farm-house, having from five to nine rooms and windows; and the first-class all houses of a better description than the preceding.

Compared with 1891, the first-class houses show an increase of 6.3 per cent., and the second-class an increase of 11.7 per cent., while the third-class decreased 19.5, and the fourth-class 52.1 per cent.

House Accommodation.

The Irish Census Statistics for 1901 also divide the accommodation afforded by the houses into four classes, on the same plan as that adopted in 1891—first-class accommodation being first-class houses in occupation of one family; second-class accommodation being second-class houses occupied by one family, or first-class houses in occupation of two or three families; third-class accommodation consisting of third-class houses occupied by one family, second-class houses with two or three families, and first-class houses occupied by four or five families; and fourth-class accommodation including all fourth-class houses, third-class houses with more than one family, second-class houses with four or more families, and first-class houses inhabited by six or more families.

Comparing the figures for fourth-class accommodation in 1901 with those for 1891, it appears that while in 1891 5.9 per 100 families had that class of accommodation the percentage in 1901 had fallen to 4.53.

Tenements.

Statistics relating to the distribution of the population according to the number of rooms in each tenement were collected at the Censuses of 1891 and 1901 for England and Scotland, but in Ireland they were obtained for the first time in 1901.

The total number of tenements of less than five rooms in the United Kingdom in 1901 was equal to 53.7 per cent. of the total number of families, the percentage for the three divisions being respectively—England and Wales 46.8, Scotland 84.4, and Ireland 75.0 per cent.

The total number of tenements of one room in the United Kingdom in 1901 was 500,614, or 5.6 per cent. of the total number of families. In England and Wales the number was 251,667, or 3.6 per cent. of the total number of families; in Scotland 169,798, or 17.5 per cent.; and in Ireland 79,149, or 8.7 per cent. of the total number of families in the country.

Of the tenements of one room in England and Wales 107,819 were occupied by one person; 77,179 by two persons; 55,813 by three or four persons; and 10,856, or 0.15 per cent. of all tenements, by five or more persons—the occupants of these 10,856 rooms numbering 60,044, or 0.18 per cent. of the total population.

The tenements of one room in Scotland in 1901 comprised 45,266 cases of tenements occupied by one person; 41,279 cases of two occupants; 51,700 where three or four persons were in occupation; and 31,553 (or 3.27 per cent. of the total number of tenements of all classes) where the occupants numbered five or more. The total number of persons in the last group was 188,049, or 4.20 per cent. of the total population of the country.

Of the 79,149 one-roomed tenements in Ireland, there were 20,994 cases in which the room had but one occupant; 41,918 where the room had two, three, or four occupants; 13,351 in which there were five, six, or seven occupants; and 2,886 in which there were eight or more occupants, including 786 cases of nine persons, 364 of ten persons, 138 of eleven persons, and 68 of twelve or more persons in the room. The total number of cases in which there were five or more persons in the room was 16,237, and the number of persons inhabiting such rooms was 101,845, or 2.3 per cent. of the total population of the country.

Thus it will be seen that while in England and Wales the one-roomed tenements occupied by five or more persons equalled only 0.15 per cent. of the total number of families, in Ireland the corresponding percentage was 1.78, and in Scotland 3.27. Also, that whereas in England and Wales the occupants of one-roomed tenements having five or more occupants each formed only 0.18 per cent. of the total population of the country, in Ireland the percentage was 2.28, and in Scotland 4.20.

SEXES.

Of the total population of the United Kingdom—41,458,721 persons—20,102,408 were males, and 21,356,313 females, showing an excess of females over males of 1,253,905, or 1,062 females to every 1,000 males. In England and Wales the number of females to 1,000 males was 1,068, in Scotland 1,057, and in Ireland 1,027.

The number of females to 1,000 males in the several Registration Counties in England and Wales varies from 890 in Radnorshire to 1,260 in Cardiganshire.

In Scotland, the proportionate number of females to 1,000 males in the Counties varies from 865 in Linlithgow to 1,269 in Shetland.

In Ireland the highest proportion of females to males was in the County Dublin, where there are 1,207 females to every 1,000 males. The lowest proportion was in the County Kildare, where there were only 832 females to every 1,000 males. This is in great part accounted for by the presence of the military in the Curragh Camp and Newbridge.

AGES.

The age distribution of the population of the United Kingdom, and of each of the three Countries, affords an interesting field of study—the important feature as regards the Kingdom at large being the decrease in the proportion of children under 10 years of age, and the corresponding increase at the later ages. The proportion of children under 10 fell from 23.6 per cent. of the population at all ages in 1891 to 22.0 per cent. in 1901, a decline which was mainly due to the fall in the birth-rate during the decennium.

In the age period 15-45 the ratio of males to the total male population in England and Wales was 47.7 per cent., in Scotland 47.1 per cent., and in Ireland only 45.8 per cent.

The ratio of females 15-45 to the total female population was 48.3 per cent. in England and Wales, 47.1 per cent. in Scotland, and 46.5 per cent. in Ireland.

The principal feature observable in a comparison of the Irish age Statistics of 1901 with those of 1891 is the great diminution in the number of persons under 20 years of age, there being in 1901 a decrease of 5 per cent. in children under 1 year, of 6 per cent. in children 1 year and under 5 years, of 11 per cent. in children 5 and under 10, of 16 per cent. in persons 10 and under 15, and 14 per cent.

in those of 15 and under 20. This decrease is directly or indirectly accounted for by emigration, the effects of which seriously disturb the age composition of the population of Ireland as compared with that of the other divisions of the United Kingdom.

The following table shows the age distribution of the population in each of the three countries in 1901 :—

TABLE *showing the Percentage of the Population of England and Wales, Scotland and Ireland respectively in 1901 in each of Twelve Age Groups :—*

PROPORTION PER CENT.—AGES.

COUNTRIES	Under 5	5–	10–	15–	20–	25–	35–	45–	55–	65–	75–	85 & up	All ages
England and Wales ..	11.4	10.7	10.3	10.0	9.6	16.2	12.3	8.9	6.0	3.3	1.2	0.1	100.0
Scotland ..	11.9	11.0	10.5	10.2	9.7	15.5	11.7	8.6	6.0	3.4	1.3	0.2	100.0
Ireland ..	9.9	10.1	10.3	10.6	10.0	14.7	10.8	9.3	7.9	4.3	1.7	0.4	100.0

CONJUGAL CONDITION.

Of the total male population of the United Kingdom in 1901, 62.3 per cent. were unmarried, 34.2 per cent. married, and 3.5 per cent. widowers. In 1891, the percentages were bachelors 63.4, husbands 33.1, and widowers 3.5.

Of the male population 20 years old and upwards, in the United Kingdom, in 1901, 33.1 per cent. were unmarried, as against 31.6 in 1891, 60.6 per cent. were married as against 61.9 in 1891, and 6.3 per cent. were widowers, as compared with 6.5 per cent. in 1891. The rise in the percentage of unmarried males, and the fall in the proportion of married men and widowers in 1901 is observable in all three countries, though in varying degrees.

In England and Wales the proportion of unmarried males in every 100 males 20 years and upwards, which was 29.1 in 1891, increased to 30.5 in 1901, while the proportion of married males fell from 64.4 to 63.3, and of widowers from 6.5 to 6.2 per cent.

In Scotland the percentage of bachelors in every 100 males 20 years and upwards rose from 35.1 in 1891 to 36.9 in 1901. The percentage of the married decreased from 58.5 in the former year to 57.0 in the latter, and of the widowers from 6.4 to 6.1.

In Ireland the proportion of bachelors amongst 100 males 20 years old and upwards, which was 44.3 in 1891, rose to 47.8 in 1901, while the percentages of the husbands and widowers decreased, the husbands from 48.5 to 45.3, and the widowers from 7.2 to 6.9.

Of the total female population of the United Kingdom in 1901, 59.6 per cent. were spinsters, 32.8 wives, and 7.6 widows. The percentages in 1891 were, unmarried 60.5, married 31.7, and widows 7.8 respectively.

Of the total female population of the United Kingdom 20 years old and upwards in 1901, 31.6 per cent. were unmarried, as against 29.9 in 1891; 55.4 per cent. were married in 1901 as compared with 56.1 per cent. in 1891; while the percentage of widows was 13.0 in 1901, and 14.0 in 1891.

These figures show an increase in 1901 in the spinsters, and a decrease in the married and widowed, and this appears in all three divisions of the Kingdom, though the proportions of increase and decrease vary.

In England and Wales the proportion of spinsters in every 100 females, 20 years old and upwards, rose from 28.1 in 1891 to 29.8 in 1901, the proportion of the married declining from 58.5 to 57.6, and the proportion of the widowed from 13.4 to 12.6.

In Scotland the proportion of unmarried females to the total females, 20 years and upwards, increased from 34.5 per cent. in 1891 to 35.4 in 1901; the percentage of wives decreased from 51.5 to 51.4, and of widows from 14.0 to 13.2.

As in the case of the males, the greatest variations are observable in Ireland. In this country the proportion per cent. of unmarried females to every 100 females, 20 years old and upwards, rose from 37.1 in 1891 to 40.9, and the proportion of wives and widows fell in 1901 as compared with 1891—the married from 45.8 per cent. in 1891 to 43.5 per cent. in 1901, and the widows from 17.1 to 15.6.

OCCUPATIONS.

Passing now to the subject of occupations, we find that there has been a slight increase in the proportion of occupied males in the United Kingdom[a]—the proportion being 82.7 per cent. of males 10 years old and upwards in 1891, and 83.4 in 1901, while the proportion of females engaged in occupations exhibited a decrease from 34.0 per cent. in 1891 to 31.6 per cent. in 1901.[b] In England and Wales the occupied males increased, during the decade, from 83.1 to 83.7 per cent. of the male population 10 years old and upwards; in Scotland they increased from 83.2 to 84.0 per cent., and in Ireland there was an increase from 79.8 to 80.3 per cent. The occupied females in England and Wales decreased from 34.4 to 31.6 per cent. of the total number of females aged 10 years old and upwards, in Scotland from 34.0 to 33.0 per cent., and in Ireland from 31.1 to 30.1.

Speaking generally as regards the United Kingdom, the principal occupations or groups of occupations, with a few exceptions—notably the agricultural class—show an increase in the proportion per cent. of the population engaged in them in 1901 as compared with 1891.

The following are the principal increases. In persons engaged in the Building trades, who represented in 1901 7.3 per cent. of the total male population 10 years and upwards, there was an increase in the ten years of 35.6 per cent., the increase in England and Wales being 36.2, in Scotland 42.4, and in Ireland 13.6 per cent. The makers of, and dealers in, Brick, Cement, Pottery, and Glass, show an increase of 27.6 per cent. during the decade, nearly all of the increase being in England and Wales.

In workers in the Metal trades, who formed in 1901 7.2 per cent. of the total male population 10 years and upwards, there was an increase of 26.1 per cent. in the

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[a] The "Occupied" in the Tables for Ireland include a small number of children under 10 years of age, while in Great Britain all such children were treated as "Unoccupied."

[b] A portion of the decrease in occupied females is only apparent, and is due to a change of classification.

United Kingdom. The percentage of workers in these trades in England and Wales increased 26.6 per cent., in Scotland 28.4 per cent., and in Ireland 1.7 per cent.

In persons employed in Industries connected with Mines, who in 1901 represented 6.0 per cent. of the male population 10 years and upwards, there was an increase in the United Kingdom of 24.4 per cent., the increase in England and Wales being 23.7, in Scotland 29.8. In Ireland the increase amounted to but 746 persons.

The Makers and Dealers in Food, including Meat, Bread, Milk, Groceries, Vegetables, &c., who comprised in 1901 4.3 per cent. of the male population 10 years and upwards, rose in the United Kingdom during the decade 16.8 per cent. In England and Wales the increase was 18.5 per cent., and in Scotland 16.9. In Ireland there was a slight diminution.

The percentage of persons engaged in the transport of passengers and goods by road in the United Kingdom increased 37.1 per cent. during the decennium, while workers on Railways (excluding Platelayers, Gangers, and Railway Labourers) increased 44.6 per cent.

In the decade there was a diminution of 4.0 per cent. in male workers and dealers in dress, exclusive of drapers. In England and Wales, and in Scotland, the increase was 6.1 and 1.7 per cent. respectively. In Ireland there was a decrease of 15.3 per cent.

Under the head of decreases in the United Kingdom during the decade, that in the Agricultural Class stands prominent. The males in this class, who in 1901 formed 13.6 per cent. of the total male population of the United Kingdom aged 10 years and upwards, fell during the decennium 6.2 per cent. In England and Wales the percentage of males engaged in agriculture in proportion to the total males aged 10 years and upwards fell from 11.7 in 1891 to 9.6 in 1901; in Scotland the fall was from 12.7 in 1891 to 10.7 in 1901, and in Ireland from 45.7 to 44.3.

Another serious decrease occurred in the Textile Industries, which in 1901 represented 3.8 per cent. of the total male population of the United Kingdom aged 10 years and upwards. The decrease in the ten years in this group in the United Kingdom was 7.1 per cent. In England and Wales the decrease was 5.2 per cent., in Scotland 13.2, while in Ireland the diminution reached 19.1 per cent.

Passing to the occupations of Females in the United Kingdom, the number of workers and dealers in Dress, including Dressmakers, Milliners, Shirtmakers, Seamstresses, and Machinists, &c. (exclusive of Drapers), increased in 1901 as compared with 1891, 2.5 per cent., the increase in England and Wales being 3.8 per cent. during the decade, and in Scotland 4.7 per cent. In Ireland a decrease is recorded of 6.5 per cent.

Schoolmistresses, Teachers, Lecturers, &c., increased during the ten years 18.4 per cent. in the United Kingdom. In Ireland the number of females engaged in teaching shows an apparent decrease of 219, but this is not a correct representation, as a large number of ladies engaged in teaching are members of Religious Orders of the Roman Catholic Church, and appear under the heading "Nun" in the Occupation Tables.

There was a considerable fall in the number of females employed in the Textile Industries, which occupied 5.2 per cent. of the total female population aged 10 years and upwards of the United Kingdom in 1901. In England and Wales a small increase is recorded, but in Scotland there was a decrease of 3.4 per cent., and in Ireland of 13.6 per cent.

Turning now specially to Ireland, the Occupation Tables in 1901, when compared with those of 1891, exhibit several important changes.

The males employed on Railways show an increase from 9,525 to 11,631, this being consequent on the extension of the railway system and the establishment of Light Railways.

Owing to the development of the Cycle business during the decade, the number of persons employed in it shows a large increase in 1901 as compared with 1891—the number returned in 1901 being 739, as compared with 62 in 1891.

There has been, further, an increase of over 30 per cent. in the workers in Machines and Implements—the number in 1901 being 10,830, and in 1891, 8,259 persons. This increase is in Engine and Machine Makers, Fitters and Turners.

The establishment of Creameries is evidenced in the Tables by the fact that 1,021 males and 434 females are returned as employed in Creameries or Milk Factories.

Another feature is the increase in the number of females engaged in several occupations.

Amongst them we find 20 qualified female doctors in 1901, there being none in the Tables for 1891. There is further an increase of 372 in the number of females connected with the medical profession, chiefly trained nurses.

There has also been a considerable increase in the number of women employed in the Printing Trade in 1901, as compared with 1891.

Lace making, which in 1891 was returned as employing 557 females, gave occupation to 2,099 in 1901.

The extension of the employment of females as commercial clerks is evidenced by the fact that while only 907 were returned under this head in 1891, 3,437 were tabulated in 1901.

We now glance at the decreases. I have already noted the decrease in the Agricultural Class throughout the United Kingdom. In Ireland we find that there was a decrease of 60.697, or roughly 6½ per cent. in the number of persons returned as engaged in Agriculture in 1901, as compared with 1891. The Emigration Statistics, which we shall deal with later on, tell us that these persons have left this country to swell the ranks of the Irish people in the United States, Canada, Australia, and elsewhere.

Another sad fact is the great diminution of the number of persons working in the Flax and Linen Industry, which lost during the decade over 17,000, or nearly one-fifth of the persons engaged in it in 1891. In the woollen manufacture also, there was a considerable decrease.

There was a decrease of nearly 25 per cent. in Boot and Shoe Makers, consequent, no doubt, on the increased importation of ready-made goods from England and America, and a decrease in Coopers, whose numbers declined from 4,263 in 1891 to 3,089 in 1901.

Social Condition Tables.

Before closing the subject of occupation, a passing reference may be made to the unique Social Position Tables for Dublin City, and the Dublin Registration Area, which are given in the General Report of the Irish Census Commission. These Tables present the inhabitants of these areas tabulated according to their social position, and distinguish the persons having stated occupations from wives and children having no stated occupation.

By tabulating the Returns of Deaths in the same way, we are enabled to construct mortality statistics according to Social Position, and in the Registrar-General's Returns is given each week a table showing the death-rate in each social class, the result of which is to show that the death-rate in the richer classes is much lower than in those exposed to poverty and hardship.

(To be continued.)

Art. VI.—*Paratyphoid Fever.* By Ernest B. Booth, M.D. Univ. Dubl.; House Surgeon, Royal City of Dublin Hospital.

The disease which is the subject of this paper is one of great and increasing interest. This interest is probably due to the fact that paratyphoid is a comparatively late addition to our medical knowledge, and also because it opens up a new field for original research.

Paratyphoid was first described in 1895, and in connection with it a bacillus was isolated to which the name Paracolon was given—a bacillus belonging to the so-called Gärtner group, which was intermediate between the *Bacillus typhosus* and the colon bacillus.

The name paratyphoid was first applied to this organism in 1896, and we now use it to designate a bacillus which gives rise to typhoidal symptoms, but which, however, though bearing a close resemblance to the *Bacillus typhosus*, differs from it in several remarkable properties.

It resembles the typhoid bacillus in the fact that it is highly motile, multi-flagellate, does not stain by Gram's method, and does not form spores.

In regard, however, to its cultivation it shows several remarkable differences. Its growth on dextrose is striking. Whilst the *Bacillus typhosus* in this medium produces acid only, the paratyphoid bacillus ferments it with the production of acid and gas. Lactose, which is fermented by the colon group, is unaffected by these two. Neutral red acted on by the paratyphoid is turned yellow, but it is unchanged by the typhoid, though the colon bacillus will also effect this change.

With litmus milk the differentiation of these three bacilli—viz., the *Bacillus typhosus*, the paratyphoid bacillus, and the colon bacillus—can be made.

The typhoid bacillus produces a permanent acidity only, the paratyphoid bacillus acidity which is followed by alkalinity, the colon bacillus permanent acidity with curdling.

The behaviour of this disease towards the Widal test is very characteristic. In all cases the reaction is negative, as clumping, if it does occur at all, takes place only in low dilutions—1-10, 1-20. On the other hand, agglutination of the paratyphoid bacilli takes place even in very high dilution—as for instance, 1-200.

There appear to be several distinct strains of paratyphoid bacilli in existence to which various names have been applied, such as the *Bacillus Gwyn, Bacillus Hatton, Bacillus O.*, &c.—names derived from their discoverers, and indeed the names of the particular patients from whom they have been isolated have been applied to them in America.

With regard to the pathology of this disease our knowledge is slight, as very few fatal cases have occurred. In those few *post-mortem* examinations which have been made no ulceration was found in the intestine, even in cases in which hæmorrhage had occurred, though undoubted infection of the gut has been noted. In some cases marked enlargement of the spleen was present.

With regard to the clinical aspect of paratyphoid fever, in the majority of cases it presents most of the characteristics of a mild attack of typhoid as regards its onset—temperature, eruption, state of the bowels, relapses, hæmorrhage, vomiting, and delirium.

In connection with paratyphoid fever I will make mention of the three following illustrative cases:—

In November of the year 1904 three patients were admitted to the Royal City of Dublin Hospital from the same house and from the same wing.

One of these, J. L., aged twenty-five, presented all the symptoms of typhoid fever; gave a positive reaction to Widal; and the case ran an uncomplicated course as an undoubted case of enteric.

The other two, however, though showing quite as well-marked symptoms as this case, presented this remarkable difference—that they absolutely refused to give the Widal reaction.

I will now describe the best marked of these two cases:--

J. B., aged thirteen, schoolboy, on October 22nd complained of a headache and of feeling cold and shivery; a couple of days later he got a pain in the right side, a little below the costal arch. For the following week the symptoms remained unchanged, except that the pain diminished, and finally disappeared. Temperature during this time varied between 99° and 100.4°. He was kept on fluid diet, but ten days after his illness commenced he was allowed a little custard, after which his temperature rose.

His family history is unimportant.

Previous illnesses.—Has had measles and influenza. In July last had an attack of pain in the same situation as already mentioned. Bowels were constipated. Temperature was not taken. Apparently he was all right again in a week.

November 1st.—Physicial examination was negative. No rose spots. Tongue red at tip and edges; coated in the centre. Pulse occasionally intermittent; frequency not exceeding 90. Temperature 102°. Spleen not palpable.

November 2nd.—Slight epistaxis. Widal reaction negative.

November 3rd.—Complaining of pain in epigastrium and in both iliac fossæ.

November 5th.—Blood examined by Dr. Wigham; gave a negative reaction to Widal, but a positive with Gärtner paratyphoid bacilli.

November 7th.—Patient presents no symptoms; complains of feeling a little weak. Face pallid; pupils medium; tongue lightly coated, red at tip. A few glands in the neck slightly enlarged. Abdomen measured 26⅜ inches at umbilicus.

November 12th.—Another examination of the blood gave positive results to Gärtner's bacillus.

November 19th.—Agar plates inoculated, found the urine grew only cocci.

November 23rd.—On 21st and 22nd temperature 99° and 100° respectively. Patient feels quite well. Abdomen measured 28½ inches at umbilicus.

November 29th.—Abdomen measured 26½ inches.

During his entire illness obstinate constipation was the rule, the bowels never moving without an enema. There was a certain amount of pain to be elicited by pressure over the epigastrium and iliac fossæ. Distension of the abdomen was present, as shown by measurements. A pulmonary systolic murmur, probably hæmic in character, could be heard. The urine never presented anything abnormal.

On the 24th day of his illness he was given custard, on the 28th bread, and finally was allowed up on November 30th—the 40th day of his illness. He was discharged from hospital on December 15th.

From the character of the temperature, the presence of constipation, the pain in the iliac fossæ, the appearance of the tongue, the distension of the abdomen, and the occurrence of epistaxis, one might very fairly form the diagnosis of typhoid fever. But when we take into consideration the fact that the blood in this case was negative to the Widal test and positive to Gärtner's bacillus, the diagnosis of paratyphoid fever becomes one of practical certainty.

The second case was identically similar to the one already described both in symptoms, signs, and blood tests.

From a consideration of these cases it must necessarily strike one that it is very probable that a number of cases which are diagnosticated as typhoid fever, and in which the Widal test is not employed, may in reality be cases of paratyphoid fever.

The value of making a diagnosis of paratyphoid fever with certainty is undoubtedly great, for those cases seem to run a much shorter and milder course than those of typhoid fever. Hence the much more favourable prognosis which the medical attendant can give to the anxious relatives and friends. The diagnosis also perhaps enables him to prescribe a somewhat more liberal diet than is customary in cases of such a kind.

It must not, however, be taken that every case which gives a negative result with the Widal reaction is one of paratyphoid fever. This is far from being the case. It is only by the agglutination of the paratyphoid bacilli by the blood of a suspected case that the diagnosis becomes a certainty.

Hence it would be of great benefit to the medical profession if they were able to obtain without difficulty pure cultures of these organisms for use in doubtful cases.

THE PARASITES OF SMALL-POX, VACCINIA, AND VARICELLA.

In the *Lancet*, December 24, 1904, is published an article by Dr. W. E. de Korté, of King's College, London, in which he claims to have discovered an amœboid protozöon in the lymph of variola, vaccinia, and varicella, as well as in the analogous disease, amaas or Kaffir milk-pox. The parasite of vaccinia and variola is described as an amœboid organism about $\frac{1}{2300}$th of an inch in diameter, its protoplasm containing highly refractive greenish particles, regarded by Dr. de Korté as spores, which in many cases render the nucleus invisible. On the warm stage, in the case of the amœba found in human vaccine lymph, there is very active amœboid movement, while in the case of that from small-pox lymph, although alteration of contour occurs, no pseudopodia have been seen. In glycerinated calf lymph large amœbæ are to be observed, which are regarded by Dr. de Korté as encysted forms. The amœbæ can best be studied in hanging-drop preparations of the lymph itself, and since they are very easily destroyed by the manipulative processes required for staining they may not be found in stained preparations, although they are capable of being stained. Dr. de Korté discusses the possibility that the supposed organisms may be leucocytes, and negatives it, among other reasons, because they persist in the lymph for as long as six months, whereas leucocytes in human blister-fluid disappear after 14 days, even though kept at the body temperature. This would hardly seem a very cogent reason in the absence of details of the origin of the blister-fluid, or of information of the duration of life of leucocytes in vaccine or variola lymph.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

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The Edinburgh Medical Journal. Edited by G. A. Gibson, M.D., F.R.C.P. Ed., and Alexis Thomson, M.D., F.R.C.S. Ed. New Series. Vol. XVI. Edinburgh and London: Young J. Pentland. 1904. 8vo. Pp. vi + 567.

We very heartily congratulate our venerable contemporary on completing its hundredth year. The "Centenary of the Journal" is the heading of the opening editorial annotation in the volume before us. From this note we learn that on New Year's Day, 1805, the first number of *The Edinburgh Medical and Surgical Journal* appeared as a quarterly magazine, under the able editorship of the younger Andrew Duncan. In 1827 a change of editors took place, Duncan being succeeded in the editorial chair by Robert Christison (afterwards Sir Robert Christison, Baronet), in association with David Craigie. Some years later Christison resigned, and Craigie remained sole editor until 1855, when an important change took place.

In January, 1841, the first number of *The Edinburgh Monthly Journal of Medical Science* was published, John Rose Cormack being the editor. It was intended to supply a want, for there was then no monthly medical journal in the British Isles.

In the April number of 1855 an announcement was made that *The Edinburgh Medical and Surgical Journal* would for the future be amalgamated with its younger monthly rival, which at the time bore the name simply of *The Monthly Journal of Medical Science.* On the 1st of July of that year (1855), accordingly, *The Edinburgh Medical Journal* made its first appearance, the editor being Henry Duncan Littlejohn, who, as the veteran Professor of

Medical Jurisprudence in the University of Edinburgh, is happily still with us in perennial youth. After some years Littlejohn (now Sir Henry) resigned the conduct of the journal into the hands of Daniel Rutherford Haldane, who was greatly assisted in carrying on his work by his friend, William Rutherford Sanders. Haldane, in turn, was followed by George William Balfour, who conducted the journal for several years. The editorial chair was next filled by Joseph Bell, who edited the journal until the end of 1896. Since January, 1897, it has been under its present editorial management. How well Dr. Gibson and Dr. Alexis Thomson have discharged their duties during the past seven years is attested by the fine series of fourteen volumes which have already been published under their supervision.

Looking back over the vista of one hundred years, the Editors promise in a Special Number to give a retrospect of the past and to chronicle the changes which their Journal has witnessed, and how it has aided in the growth of knowledge and in the paths of discovery. We look forward with friendly interest to a perusal of the Centenary Number of our famous contemporary, and we wish *The Edinburgh Medical Journal* prosperity *ad multos annos* in its second century.

The After-treatment of Operations. A Manual for Practitioners and House Surgeons. By P. LOCKHART MUMMERY, F.R.C.S. Eng., B.A., M.B., B.C. Cantab.; Hunterian Professor, Royal College of Surgeons; Surgeon to King Edward VII. Hospital for Officers; Assistant Surgeon St. Mark's Hospital for Fistula and other Diseases of the Rectum, and to the North-Eastern Hospital for Children; Demonstrator of Operative Surgery St. George's Hospital. Second Edition. London: Baillière, Tindall & Cox. 1904. Pp. 240.

SUCH a short period has elapsed since we reviewed the first edition of this manual that it is scarcely necessary to do more than mention that its success has demanded a second edition within twelve months—a fact which emphasises more strongly than anything we can say the value of the work. The principle change in the edition before us is the embodiment of Crile's more recent work on shock and collapse, the difference between these two conditions and the best methods of treating them as proven by his numerous experiments. We congratulate the author on the success attending his work, and can confidently recommend the book to every house surgeon and to the general practitioner who is often compelled to undertake the subsequent treatment of serious operation cases and in whose hands the successful outcome of such cases lies.

An Atlas of Illustrations of Clinical Medicine, Surgery and Pathology. Compiled for the New Sydenham Society. Fasciculus XIX. (Double Fasciculus); and Fasciculus XX. London: The New Sydenham Society. Agent: H. K. Lewis, 136 Gower-street, W.C. 1904. Folio.

FASCICULUS XIX., being X. and XI. of the Clinical Atlas, contains nine coloured plates as illustrations of herpetiform morphœa and fourteen plates without colour, also illustrating morphœa as well as hemiatrophy of the face. The coloured plates have been executed with much fidelity and skill by Messrs. Bale and Danielsson, of London. They and the uncoloured plates present a unique demonstration of the strange lesion which was first known as "Addison's Keloid" or "Morphœa," and subsequently as "Sclerodermia." Its sequel, hemiatrophy of the face, is likewise fully represented in a series of uncoloured plates.

The second part of this double Fasciculus contains a series of beautiful radiographs illustrating Colles's fracture, mostly from the Jones-Morgan collection. Our readers are probably well aware that it was Abraham Colles, of Dublin, who, in 1814, described the fracture which has since borne his name. The merit due to this great surgeon is that he recognised the fact that in many cases diagnosticated as "sprained wrists" the lower extremity of the radius was really broken. He was led to this conclusion by observing that he could by moderate traction produce movement at the site of the injury, for he had dissected few, if any, specimens. The designation "Colles's fracture" is applicable to any fracture occurring in the expanded carpal extremity of the radius.

The result of the radiographic investigation of this injury seems to be to throw doubt on the efficacy of the recognised treatment by splints. Those who disuse all splints and make no efforts at reduction consider that no sort of disability results from their negative practice. They assert that the injured hand is fit for use again in a much shorter time than if splints have been employed, that usually little or no subsequent treatment by massage is required to restore free motion, and that in ultimate usefulness the hand is just as good as its fellow. Bearing on this point, Plates M and S should be carefully studied. Plate M is a radiograph of a Colles's fracture taken in the eighth week. No particulars are forthcoming as to the treatment, or as to the condition of the bones when examined soon after the accident. It may be presumed that the usual splint-treatment had been adopted, and that no real reduction of the fracture had ever been accomplished. Plate S illustrates the position of the bones in an ordinary case of Colles's fracture after very careful and systematic treatment. After thirteen weeks the radiograph shows that there is still an impacted fracture, with displacement of the carpal fragment to the radial border. The impaction seems to shorten the radius to the extent of a quarter of an inch.

The Twentieth Fasciculus of the Atlas contains as many Plates as there are letters in the alphabet and ten supplementary Plates. In Plates A to K illustrations of miscellaneous subjects are given—the subjects being Sprengel's shoulder (congenital dwarfing and malposition of the scapula), paralysis of the serratus magnus, a group of sporadic cretins, family albinism, Bazin's malady, accessory or supplementary thyroids, case of leprosy in Gibraltar, a series of photographs of syphilis maligna, chancre on the hand of a midwife, serpiginous lupoid, syphilis, and corymbiform syphilitic eruption. Plates L to Z contain radiographs of various fractures and dislocations. They form a valuable contribution to scientific surgical diagnosis.

The accompanying letterpress abounds with wise criticisms, and bears internal evidence of its authorship.

Atlas of the External Diseases of the Eye, including a Brief Treatise on the Pathology and Treatment. By PROFESSOR DR. O. HAAB, of Zurich. Authorised translation from the German. Second Edition, Revised. Edited by G. E. DE SCHWEINITZ, M.D. With 98 Coloured Lithographic Illustrations on 48 Plates. Philadelphia, New York, London: W. B. Saunders & Co. 8vo. Pp. 232.

THIS is one of that most excellent series known as "Saunders' Medical Hand-Atlases," which are authorised translations into English of the world-famous "Lehmann medicinische Handatlanten." Each of the 48 beautiful plates is accompanied by a full and appropriate description.

The book is beautifully got up, and of very moderate price, and will be found a great help to all those interested in the subject who yet are out of reach of an ophthalmic clinique where the real thing can be seen. The "Atlas" is the best thing of its kind that we have yet seen.

The Refraction of the Eye. A Manual for Students. By GUSTAVUS HARTRIDGE, F.R.C.S. With 105 Illustrations. Twelfth Edition. London: J. & A. Churchill. 8vo. Pp. 271.

As we have already on more than one occasion reviewed most favourably former editions of this attractive treatise it is unnecessary to enter here into detail regarding the present edition; suffice it to say that the twelfth edition has been revised in every part and brought up to date, and that the chapter on Retinoscopy has been re-written. That the book has been appreciated is shown by the fact that twelve editions have during ten years been issued, containing 19,750 copies. We still recommend the book as amongst the really good ones of its class.

Aids to Sanitary Law. By HARRY CRITCHLEY, M.A., M.D., D.P.H. London: Baillière, Tindall & Cox. 1904. Pp. 82.

AMONGST the many subjects now included in the curriculum of the examinations for the Diploma in Public Health probably none is approached by the student with such a feeling of hopelessness as that of Sanitary Law. Buried in Acts of Parliament, with which the Medical Officer of Health apparently is not concerned, lie clauses which are of real importance to him in his work. Hitherto the student has had to acquire his knowledge of the subject by a process of more or less laborious research amidst a mass of legal verbiage. Dr. Critchley's little book affords a valuable aid to the subject—it does not profess to do more. It seems to us to be too condensed, but nevertheless it is a useful index, and to a great extent fills a want long felt by those interested in sanitary science.

The Modern Nursing of Consumption. By DR. JANE H. WALKER, Physician to the New Hospital for Women, London, and Medical Superintendent of the East Anglian Sanatorium, Nayland, Suffolk. London: The Scientific Press, Ltd. Pp. 47.

THIS is an excellent little book, written by a woman for women, and full of details which might escape the notice of a mere man, but which mean much to the consumptive patient, as tending to his comfort and well-being. It should prove useful to nurses who, having acquired a knowledge of routine work in a general hospital, intend to devote themselves to private or district nursing, or to work in a sanatorium. To such we cordially recommend it.

PART III.

MEDICAL MISCELLANY.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—Sir Thornley Stoker, M.D., F.R.C.S.I.
General Secretary—James Craig, M.D., F.R.C.P.I.

SECTION OF PATHOLOGY.

Friday, November 25, 1904.

President—H. C. Earl, M.D.
Sectional Secretary—Arthur H. White, F.R.C.S.I.

The President in the Chair.

Villous Tumour of the Bladder.

The President exhibited a small villous tumour of the bladder.

A Case of Acute Yellow Atrophy of the Liver.

Dr. W. J. Thompson stated that E. B. was admitted to Jervis-street Hospital on August 24, 1904, a few weeks after her confinement. She had been suffering from jaundice one week. She was aged twenty-seven, married six years, and had three children; her family and personal history were good; had a hard life and lived in a tenement house in a congested part of the city. On admission, the case seemed an ordinary catarrhal one; no enlargement of liver, all the organs normal, urine contained a slight trace of albumin. She seemed to improve during the first week, but got worse during the second week. Nausea became almost constant and acute; sharp, spasmodic pains in liver became severe. During the third week liver dulness greatly diminished. Leucin and tyrosin were detected in the urine, and at same time urea was diminished. At the end of the third week severe nervous and cerebral symptoms developed and she died three days afterwards, four and a half weeks after the first sign of jaundice. At the *post-mortem* examination the liver was found to be small and soft, and weighed only 29 ozs. All the abdominal organs were in a healthy condition, save for a small ovarian cyst. The clinical points of interest are: (1) The protracted length of the attack, four and a half weeks; (2) the acute, spasmodic, and agonising liver pains; (3) the absence of any hæmorrhagic manifestations.

PROFESSOR E. J. McWEENEY then described the character of the specimen as follows: Liver weighed 29 ozs., small, very soft, and pulpy; capsule wrinkled, pale red with yellowish mottlings. On section, mostly reddish with bright yellow patches, lobular marking obliterated. Dimensions of right lobe, 6 in. from side to side, 5½ in. from before backwards, 1¾ in. thick. The left lobe was at most only half an inch thick. Gall-bladder normal. The microscopic examination was made by means of teesed preparations, frozen and paraffin sections. It showed complete necrosis of the liver cells; patches of round-cell infiltration, which still preserved their nuclear staining; patchy pigmentation of the liver cells, with yellow granular matter which did not give an iron reaction (bile); moderate fatty degeneration; and the presence of minute, yellowish-brown globular concretions in groups and rows. These were very abundant in the tissue, and varied from 12μ to 30μ in diameter. Some of them seemed radially cleft others were coated with a prickly layer of minute needle-shaped crystals, whilst others presented obscure concentric striation. There were also minute colourless acicular crystals lying singly and in sheaves. These objects were doubtless crystals of leucin and tyrosin. The globules were soluble in alkalies and weak H_2SO_4; insoluble in ether, alcohol, and chloroform; partly soluble in water. A few bacilli were demonstrable on the sections, and of the numerous culture-tubes inoculated a few showed colonies. Study of the organisms, however, convinced him that they were merely ordinary putrefactive germs.

PROFESSOR O'SULLIVAN said he remembered one case of the kind, which belonged to Dr. Wallace Beatty. He had some sections of it which resembled those shown considerably, but his were more advanced. He was not sure that he would have taken Professor McWeeney's view of the condition of the liver cells, as he did not think the process was very far advanced. There was certainly not so much disintegration shown in the sections as in those of the case in his possession. The process seemed to be starting from the hepatic veins, the portal areas being less affected.

The PRESIDENT had seen portions of a liver from an undoubted case of this disease. A large portion of the right lobe was involved, and on section of this, more than half the affected portion was a brilliant red colour, and the rest an equally brilliant yellow. In the red area the liver cells had disappeared, and in the portal canals there was small round-cell infiltration. In the yellow areas were cells which looked absolutely normal. He was surprised at the small amount of fat he found in the cells. He noticed in some parts of the yellow areas, where they bordered on the red, that the centres of the lobules were certainly more affected than the margins. The process seemed to be progressing from the centre of the lobule to the periphery.

PROFESSOR MCWEENEY, in replying, said he considered that the cells were completely necrotic, though their outlines were preserved. They did not give the ordinary nuclear stain. The protoplasm had stained diffusely with hæmatoxylin stain. The preparations showed no well-preserved liver cells. The yellow pigmentation was well marked in one of the sections. The bacteriology of these cases was very interesting, because it was very important to eliminate the theory of living bacteria. The generally accepted theory was that the disease was due to toxins. He had set going a number of aerobic and anaerobic cultures, but the material was not perfectly fresh. The anaerobic tubes remained sterile, and the aerobic showed some small white colonies which he considered unimportant. He cut some sections in paraffin, and found occasional bacilli, which he thought were ordinary putrefactive organisms. He thought the toxæmia theory still held the field.

Glanders.

The **SECRETARY** (for **DR. E. F. STEPHENSON**) read notes of a fatal case of glanders in a man. [It will be found at p. 35.]

Glioma of the Retina.

MR. STORY and the **PRESIDENT** exhibited a glioma of the retina, with microscopic sections.

Glioma of the Retina.

DR. MOONEY exhibited a specimen which was a right eye removed from a female child, aged three, for glioma retinæ. Four months before admission to the Children's Hospital, Temple-street, Dublin, the eye squinted, and for four weeks the pupil had been white and the eye blind. The eye showed no irritation, nor was there pain, although the tension equalled + 2. No proptosis. Microscopically, the tumour showed the usual appearances, much of it being necrotic and fluid, with spots of hyaline degeneration.

The optic nerve was wholly invaded by gliomatous cells up to the point of section, only the fibrous trabeculæ remaining.

Professor McWeeney said he never saw a prettier example of infiltration of the optic nerve. The resemblance between the cells of the tumour and the nuclear cells of the retina was very striking. He agreed as to the rarity of finding tubes lined with epithelium. These tumours, when not necrotic, were formed of small, round nuclei, broken up here and there by patches of necrosis. In Dr. Mooney's case patches of hyaline degeneration could be seen. It was not so well marked in Dr. Earl's case.

Professor O'Sullivan thought the resemblance to angio-sarcoma was due to the fact that the cells in the neighbourhood of the vessels were well nourished, while those away from them were not, and therefore became necrotic. This should be borne in mind in examining all cases of angio-sarcoma. The cells thus seemed to exist as tubes round the vessels.

Dr. Mooney, in replying, said he had omitted to mention that there were some calcareous spots in his specimen.

The **President**, in replying, said he agreed with Professor O'Sullivan as to necrosis occurring in those cells which were far away from the vessels.

Hæmatological Observations on a case of Myelæmia.

Professor E. J. McWeeney described this case, and exhibited the spleen and bone-marrow, as well as numerous blood-slides and sections of the various organs. The patient was a man, aged forty-one, an inmate of Mullingar District Asylum for the past six years, suffering from paranoia with hallucinations and delusions. After four years of good bodily health he began to lose weight and became unable to work. A large abdominal tumour was then discovered and recognised to be the hugely enlarged spleen. Blood counts yielded reds, 2,680,000, and whites, 450,000. Despite rest in bed, good food, and open air, he became steadily weaker. There was slight fever. Anæmic symptoms never prominent, and hæmorrhages did not supervene till a few days before death, when he suffered from epistaxis and hæmorrhagic effusion into the subcutaneous tissue of the right thorax. The duration of the case from the discovery of the splenic tumour was fourteen months. The autopsy revealed the following chief points:—Enormous enlargement of the spleen, which weighed 145 ozs., was firm, dark red and homogeneous on section, and presented neither hæmorrhages, infarcts, nor whitish infiltrations

Marrow of long bones pink, fleshy, vascular, completely altered from its normal fatty state. Superficial lymph-glands not enlarged. Of the internal glands, the bronchial, omental, mesenteric, and cœliac were slightly enlarged. There was slight obsolete tubercle in both apices. The liver weighed 138 oz., but showed no macroscopic change beyond slight nutmeg discoloration and marked hyperæmia. No leukæmic infiltration in any of the organs. The results of the histological examination were then given. Blood-films taken shortly before death showed: Polymorphs, 35 per cent.; myelocytes, 45 per cent.; transitionals, 3.5 per cent.; small lymphocytes, 2 per cent.; eosinophiles, poly- and mono-nuclear, 14.5 per cent. A certain number of mast-cells were seen, and polymorphs with mitotic nuclei were readily found in the peripheral blood. Marrow films revealed giant-cells, myelocytes, eosinophiles of both kinds, large and small hyaline mono-nuclear and normoblasts in varying proportions. Megaloblasts were very few, and that class of cell was represented by forms with nucleus and discoplasm of megaloblastic type, but *smaller than an ordinary red corpuscle.* The speaker expressed his deep sense of obligation to Dr. A. Finegan, Resident Medical Superintendent of Mullingar Asylum, for permission to bring the case forward, and to Dr. W. S. Gordon, Assistant Medical Officer, for the very full clinical notes of the case.

Prof. White said that the point which interested him most was the section which showed what was probably mitosis. He was convinced of the fact that mitosis did occur in the circulating blood under certain conditions.

Prof O'Sullivan suggested the possibility that the giant-cells in the liver capillaries might have been marrow cells carried there.

Prof. McWeeney, in replying, said that the giant-cells were products of the endothelium.

SECTION OF MEDICINE.

President—W. J. Smyly, P.R.C.P.I.

Sectional Secretary—R. Travers Smith, M.D.

Friday, December 9, 1904.

J. Hawtrey Benson, M.D., in the Chair.

Exhibits.

1. **Dr. Coleman** exhibited a case of congenital bulbar paralysis.

Dr. F. C. Purser said he had to thank Dr. Coleman for having given him many opportunities of examining the case in hospital. Bulbar paralysis was certainly an uncommon disease, occurring in young children. The first time he saw the case he thought it could only be an anterior poliomyelitis, affecting the nuclei in the medulla oblongata, and so causing symptoms of paralysis, especially of the seventh, ninth, and twelfth nerves, but on thinking over the case he could not recall having seen or heard of such a condition, and so tried to think of some other explanation. He then thought it might be due to a thrombosis or other vascular lesion, but it was improbable that the symptoms would be so localised, and also for that same reason such things as tumour, gumma, &c., were excluded. Another idea was that it was a pseudo-bulbar paralysis. There were cases of congenital or infantile bulbar paralysis recorded, but they differed in this respect: that there was a strong family history of the condition having occurred in more than one member of the same family, the parents also having been blood relations. Also the upper part of the face was as much affected as the lower. The observers attributed it to a hereditary tendency to early atrophy of the nerve nuclei, and a failure in the perfection of their development. Whether there were any pathological grounds for these theories or not he did not know. The theories which he would submit himself were—first, an affection of the nerves themselves, rather than the nuclei from which the nerve fibres arose. In this connection he might mention a case of bulbar paralysis which had occurred suddenly in a young person after laryngismus stridulus. It might only have been a coincidence, but both were possibly caused by toxins. Secondly, a primitive myopathy may have affected the involved muscles. He certainly had never heard of such, but a hereditary disease had to begin somewhere.

2. Dr. Coleman also showed a case of pityriasis rubra.

The Chairman said the case reminded him of a case of pityriasis rubra which had been an exact facsimile of the one now shown, but there was no history of a preceding eczema. The chief point about the case had been that it got well under four or five weeks' treatment by arsenic.

Dr. O'Brien said that the characteristic rash of pityriasis rubra was very abrupt, but in this case it had taken a considerable time to spread, which would contraindicate pityriasis rubra.

Dr. Kirkpatrick took it that Dr. Coleman differentiated this case from an ordinary case of pityriasis rubra, as he looked on it as secondary, since it came on subsequent to psoriasis. He wished to know if Dr. Coleman thought the treatment of the psoriasis had anything to do with the causation of the pityriasis rubra, or exfoliative dermatitis. He thought it a pity to use the term pityriasis rubra, which had a definite connection with a form of disease, for conditions which were not similar to it, and he considered that the term "exfoliative dermatitis" described it better.

Dr. Coleman, in replying, said that the only treatment used was calamine lotions and olive oil, or olive oil and lime water: simple emollients. He had not given arsenic on account of the acuteness of the case. There had been a distinct improvement during the last week. He had had a case of primary pityriasis rubra which had got well under similar treatment. As to diagnosis, he thought that, as the case had no other symptoms than universal redness and thin scales, these were sufficient to exclude any other skin disease but pityriasis rubra. It was not very essential where the disease began, as it might begin anywhere, and spread rapidly over the whole body. That being the case you would expect it to start from the psoriasis lesions, which it had done. He agreed with Dr. Kirkpatrick that exfoliative dermatitis would be a better term.

3. **Dr. T. P. C. Kirkpatrick** showed a well-marked case of ichthyosis simplex. The patient, a male, aged twenty-five, stated that the condition had been present as long as he could remember, but that none of his family had ever had any similar condition. The patient has been recently infected with primary syphilis, and is now developing an extensive secondary pustular eruption on the trunk and limbs. The ichthyotic condition of his skin has not caused him any serious inconvenience.

Dr. O'Brien said he had a patient, a man, aged twenty-six, with all his organs healthy, who had suffered from the condition for fourteen years. Three brothers and two sisters had eczema. He thought these cases could be improved, but not cured.

Dr. Kirkpatrick, in replying, said it was of interest to see whether the accompanying syphilis would have any effect on the disease, as in cases of ichthyosis associated with small-pox.

4. **Dr. F. C. Purser** showed a peculiar deformity of the spine—with nervous symptoms—in a girl, aged eight, who was born with spina bifida. Marked deformity of the spine remained, causing muscular wasting, anæsthesia, lost knee-jerk, and trophic sores on the left leg.

Syringomyelia.

Dr. O'Carroll reviewed three cases of syringomyelia which he had formerly had under his care, and gave an account of the symptoms of a fourth case, which had died recently. In this patient the appearances were practically those of amyotrophic lateral sclerosis, with marked wasting in the muscles of the upper limbs, and some clawing of the hands. The remarkable feature of the case was the absolute absence of anæsthesia of any kind, though frequently searched for, coupled with tenderness to pressure of the second and third dorsal vertebræ and of the right second rib, which had led to a diagnosis of disease of those vertebræ inducting a compression myelitis. The cavity in the cord extended through the cervical and dorsal regions, was about 5 mm. in average diameter, and in some places was double.

Dr. Coleman said they had to thank Dr. O'Carroll for having thrown much light on this disease, he having first described it in this country. He thought that the case would not have been absolutely diagnosticated as syringomyelia from the symptoms, and he believed that more of these cases would be discovered if thorough *post-mortem* examinations were made, as Dr. O'Carroll was in the habit of doing. He himself had had a case of the disease under observation for the last ten years. It began when the patient was a boy of ten, and the muscular symptoms were then well marked, with the characteristic dissociation of sensations. The anæsthesia and sensory symptoms were present in the arms now exactly as they were ten years ago.

Dr. W. J. Thompson said the history of the case showed the difficulty of making a positive diagnosis, and the necessity for making thorough *post-mortem* examinations.

Dr. O'Carroll, in replying, thanked those who had discussed his paper. He said he was under the impression that a fair number of those cases had spastic phenomena in the lower limbs, and the two other cases he had examined certainly had them. The case Dr. Coleman had shown was now in the Incurable Hospital, and was doing well. He had well-marked spastic phenomena. In fact, he thought that syringomyelia might present a picture like a compression myelitis, except that it was uneven, and had the peculiar sensory phenomena and trophic disturbances, such as whitlows, perforating ulcers, talipes, &c.

AN OLD-TIME PHYSICIAN AND ADVENTURER.

"CAPTAIN" THOMAS DOVER, M.B., *Physician, Pirate,* "*Quicksilver Doctor,*" *Inventor of* "*Dover's Powder,*" *and Discoverer of* "*Robinson Crusoe.*" By JOHN KNOTT, M.A., M.D., Ch.B., and Dipl. Stat. Med. (Univ. Dub.); M.R.C.P.I.; M.R.I.A.; &c.

THE union of the cognomen of Dover with the still (deservedly) popular remedy, through its connection with which the name is now almost solely known to the great mass of the profession, is probably the most remarkable instance known to the history of the healing art of the survival of the reputation of a complex prescription from the days of pure empiricism into those of (approximately) exclusive science, and of the now, apparently, inseparable amalgamation of such preparation with the inventor's name. The *Mithridatum* of the famous monarch of Pontus retained its purely mythological reputation during—and only during—the ages, and among the nations, of unlimited credulity and boundless ignorance. The *Theriaca* of Nero's celebrated medical attendant enjoyed, in its way, an approximately similar fame. Many of the prescriptions recommended by Galen were long used, and relied on with unquestioning faith; but none have succeeded in establishing any special claim on the theory and practice of these latter centuries of "philosophic doubt" and scientific scepticism.

Curiously enough, however, the special connecting link between the preparation and the application of this powder, which was forged by the inventor himself, appears to have become completely lost. The principal ingredients of Dover's original prescription are still employed—approximately, if not exactly—in the form in which they were recommended by him. But probably very few practitioners who prescribe the famous sudorific, anodyne, and febrifuge powder, are aware that it was originally prepared and recommended—solely—as a specific *cure* for an acute attack of gout.

The original directions of the inventor of "Dover's powder" for the preparation of his special remedy are as follow:—

"Take Opium one Ounce, Salt-Petre and Tartar vitriolated, each four Ounces; Ipocacuana one Ounce, Liquorish one Ounce. Put the Salt-Petre and Tartar into a red-hot Mortar, stirring them with a Spoon till they have done flaming. Then powder them very fine; after that slice in your Opium; grind these to a

Powder, and then mix the other Powders with these. Dose, from forty to sixty or seventy Grains in a Glass of White-Wine Posset going to Bed. Covering up warm, and drinking a Quart or Three Pints of the Posset-Drink while sweating."

And the prognosis of the case, after the adoption of the author's advice, is thus stated in his own words :—" In two or three Hours, at furthest, the Patient will be perfectly free from Pain; and though before not able to put one Foot to the Ground, 'tis very much if he cannot walk the next Day. When it is taken, keep your Bed till next Day Noon. This Remedy may be taken once a Week, or once a Month."

And he anticipates some doubts which practitioners very naturally would—even in the present day—feel disposed to raise in connection with the question of dosage : " Some Apothecaries have desired their Patients to make their Wills, and settle their Affairs, before they venture upon so large a Dose as I have recommended, which is from Forty to Seventy Grains. As monstrous as they may represent this, I can produce undeniable Proofs, where a Patient of mine has taken no less a Quantity than a Hundred Grains, and yet has appear'd abroad the next Day.

" This notion of theirs proceeds entirely from their Ignorance, and from the want of knowing the Nature of those Ingredients that are mix'd up with it, for they naturally weaken the power of the Opium."

It is hardly necessary to point out to my readers, in passing, that something of the non-syllogistic assertion and characteristic philadelphic feeling evidently blossomed in the profession in the days of Thomas Dover—of which fossil traces are occasionally exhumed in our own generation. A copy of the volume which teaches the science and art of Medicine, as known to and practised by him, now lies before me. The title-page is in itself a literary treat. It reads as follows :—

" The Ancient Physician's Legacy to his Country. Being what he has collected himself in Forty-nine Years' Practice : or, An Account of the several Diseases incident to Mankind, described in so plain a Manner, that any Person may know the Nature of his own Disease. Together with the several Remedies for each Distemper faithfully set down. Designed for the Use of all Private Families. *Homines ad Deos, nulla in re propius accedunt, quam Salutem hominibus dando.* Cic. By Thomas Dover, M.B.

The Fifth Edition. In this Edition are very considerable Additions; besides a great Number of Letters sent from several Parts of *England* of the extraordinary Cures performed by Crude Mercury. With some Remarks on the Author of the *Use and Abuse of Mercury.* London: Printed for A. BETTESWORTH and C. HITCH, at the *Red Lion* in *Pater-Noster-Row;* and J. BROTHERTON, at the *Bible,* next the *Fleece-Tavern* in *Cornhill,* 1733. Price stitched Three Shillings."

The precise date—or even year—of the nativity of Thomas Dover has not been transmitted to posterity. But he is said to have first seen the light about 1660—in Warwickshire. He had the auspicious (professional) good fortune to become a pupil of the most representative English physician of his generation. He tells us in his "Legacy": "As I cannot fail of having the greatest Veneration for the Memory of my old Master, Dr. Sydenham, I often remember his Observations, especially upon Opiats, . . ." These words form a refreshing contrast to the various references made to the opinions and persons of his surviving contemporaries. He gives us his personal experiences of small-pox as an invalid pupil, and they throw an interesting side-light on the practice of "the English Hippocrates":

"WHILST I lived with Dr. *Sydenham,* I had myself the Small, Pox, and fell ill on Twelfth Day. In the Beginning I lost twenty-two Ounces of Blood: He gave me a Vomit; but I find, by Experience, Purging much better. I went abroad, by his Direction, till I was blind, and then took to my Bed. I had no Fire allow'd in my room, my windows were constantly open, my Bed-Clothes were order'd to be laid no higher than my waist. He made me take twelve Bottles of small Beer, acidulated with Spirit of Vitriol, every twenty-four hours. I had of this Anomalous Kind to a very great Degree, yet never lost my Senses one Moment. This Method will serve very well in The Confluent Sort."

We find Sydenham's promising pupil entering on practice in Bristol in 1684. The career was evidently too "slow" for a person of Dover's mental and physical energy, so that we find him leaving his native shores in 1708 for a circumnavigation tour of the globe, of the regulation three years' period. He and a number of other adventurers sailed in two ships—the *Duke* and *Duchess.* Dover was *Captain* of the former, and President of the General Council of the Expedition, with a double voice in the decision of its complex transactions. He held *no medical charge;* but there were four qualified surgeons—two to either vessel! And our hero "sailed the Spanish Main"—and the other seas, during his triennial term of chosen adventure. And he captured a valuable Spanish "prize" too—of twenty-one guns. A larger item of business consisted in the sacking of the famous Peruvian-Spanish city, which appears to have been the great objective of the English buccaneers of the time. This matter was too important to be omitted from the "Legacy"; and he gives his readers in this connection his experiences of the Plague, and his theory and practice regarding the same; which may still prove interesting to inquiring readers, as that scourge of humanity yet continues to flourish so vigorously in sub-tropical climes.

"When I took by Storm the two Cities of *Guaiaquil*, under the Line, in the *South Seas*, it happen'd, that not long before, the Plague had raged amongst them. For our better security, therefore, and keeping our People together, we lay in their Churches, and likewise brought thither the Plunder of the Cities: We were very much annoyed with the Smell of dead Bodies. These Bodies could hardly be said to be Buried; for the *Spaniards* abroad use no Coffins, but throw several dead Bodies one upon another, with only a Draw-board over them; so that it is no wonder we receiv'd the Infection.

"In a very few Days after we got on board, one of the Surgeons came to me, to acquaint me, that several of my Men were taken after a violent Manner, with that Languor of Spirits that they were not able to move. I immediately went among them, and, to my great Surprize, soon discerned what was the Matter. In less than Forty-eight Hours we had in our several Ships one hundred and eighty Men in this miserable Condition.

"I ORDER'D the Surgeon to bleed them in both Arms, and to go round to them all, with Command to leave them Bleeding till all were blooded, and then come and tie them up in their Turns. Thus they lay bleeding and fainting, so long, that I could not conceive they could lose less than one hundred Ounces each Man.

"If we had lost so great a Number of our People, the poor Remains must infallibly have perish'd. I began to consider, that the Plague was no more than a Fever of the most exalted kind; and so *Duro huic nodo durior adhuc cuneus adhibendus.* A Fever we define to be *Aucta sanguinis Fermentatio sanguini & humori-*

bus inducta. The only Intention of Healing, must be to abate that preternatural Fermentation, and resist Putrefaction, which must be by large Quantities of cooling and diluting Liquors. We had on board Oil and Spirit of Vitriol sufficient, which I caused to be mixed with Water to the Acidity of a Lemon, and made them drink very freely of it; so that notwithstanding we had one hundred and eighty odd down in this most fatal Distemper, yet we lost no more than seven or eight; and even these owed their Deaths to the strong Liquors which their Mess-Mates procured for them.

"They had all Spots, which in the great Plague they call *Tokens;* few or none of the *Spaniards* escaped Death that had them; but my People had them, and Buboes too.

"Now if we had had Recourse to Alexipharmicks, such as *Venice* Treacle, Diascordium, Mithridate, and such-like good-for-nothing Compositions, or the most celebrated *Gascoin's* Powder, or Bezoar, I make no Question at all, considering the Heat of the Climate, but we had lost every Man."

The record is a remarkable one, and is delivered in a tone of what I believe to be one of straightforward candour. The writer tells us of a series of personal performances which are usually referred to in general literature, as murder, robbery, and sacrilege; after which he displays an honest professional pride in detailing the combination of good sense and skill, of sound theory and successful art, by which he saved the lives of his pirate crew! Whether such practice can even be received in evidence, in a scientific court established during the reign of the present dynasty of pathogenic microbes, the history of a professional future alone can tell.

But another event is connected with the record of the "periplus" of Thomas Dover, which appeals to a still larger circle of readers than the literature of our profession can ever reasonably hope to command. On the 2nd of February, 1709, his ship touched at the island of Juan Fernandez, where he found Alexander Selkirk; who had lived alone on his remote insular territory during a period of four years and four months. All students of English literature know that the history of the unique experiences of that shipwrecked voyager furnished Daniel Defoe with the inspiration of his *Robinson Crusoe;* and all true members of the medical profession should, I venture to suggest, make it an item of collateral duty to supply the (still unknowing) public with a knowledge of the fact that the world owes to the medical inventor of *Dover's powder* the discovery and (pure) culture of the (non-microbic) germ to which is due the genesis of that unique volume, which has probably contributed more sinless and stainless pleasure to the life of juvenile readers than has any other document known to the annals of typography.

Ten years after his return to England (Sept. 20, 1721) we find Dover become a Licentiate of the College of Physicians, London; and he appears to have practised in Cecil-street up to 1728. Our adventurous physician then seems to have disappeared from the English metropolis till 1731, when he reappeared in Lombard-street—also seeing patients daily at the Jerusalem Coffeehouse. In 1736 he moved to Arundel-street, where he died in 1742.

In the history of the healing art there are few names so familiar as that of Dover; while, curiously enough, of the literature of medicine, there are few volumes so seldom seen as the rare one in which he first published the composition and use of the powder which has made him immortal. And, perhaps, more curious still is the fact that while the powder—in approximate purity—has been preserved, its original use has been lost, and even forgotten. The omission of the "Liquorish," which tended to diminish the nauseousness, may be disregarded. The *Salt-Petre* and "*Tartar vitriolated*," when treated according to the original commandment, must have been reduced to potassium oxide; and would thus weigh each a little less—so that the actual proportions of potassium salt and opium are nearly preserved in our twentieth century preparation.

As might be expected from one of his daringly adventurous career, Thomas Dover was not slow to assert his merits as a practitioner. Referring in the early pages of his "Legacy" to the opinion expressed by the famous Dr. Radcliffe: "That it is expedient for young gentlemen, entering upon our Profession to travel," he proceeds to observe: "If travelling be necessary to make an accomplished Physician, I am very sure that I have travelled more than all the Physicians in *Great Britain* put together."

At least one passage of Dover's remarkable volume contains a possible suggestion of a view of the genesis of the lowest forms of life, and the importance of the undiscernible varieties of the same, which may with some plausibility be regarded as the cloud on his mental horizon, no bigger than a man's hand, whose presence foretold the downpour of pathogenic organisms in which the opening of the twentieth century has found the entire domain of clinical pathology submerged. The following is that to which I allude :—

" Since Mention has been made of *Mothers*, I can't but observe how religiously they restrain their Children from eating green Fruit, from a Notion that it breeds Worms : However singular I may appear in my Opinion, I hold the contrary to be true ; green Fruit being rather a great Destroyer of Vermin.

" 'Tis *Ripe Fruits* that breed Worms ; for it is manifest all Animal Corruption turns to Vermin ; and the same in Vegetable Putrefaction. Now, ripe Fruits being the last Fermentation of Perfection, or rather the first of Putrefaction, the Vermicular Ovaria must be very pregnant ; which, when receiv'd in a depraved Stomach, may prove as proper a Nidus for their Vivification, as the Corruption in which they are inveloped.

" The most offensive, and most dangerous of all Species of Vermin, are not visible to the naked Eye."

The writer has not given us his reasons for the item of scientific faith which existed in him, and the inspiration of which dictated the last sentence of this quotation. However, we know that he was a contemporary of Leeuwenhoeck, whose junior he was by some twenty-eight years.

The notoriety which Dover acquired in private medical practice appears to have been very largely based on his unbounded use of mercury, and his untiring advocacy of the therapeutic virtues of this rather mysterious metallic element. His devoted activity in that direction procured him the soubriquet of " The Quicksilver Doctor." In his monumental " Legacy " he approaches the subject in the following words :—

" 'Tis a generally-receiv'd Notion, nay, even amongst many Gentlemen of the Faculty, the Quicksilver is Poison : If such Persons are not ashamed of their being no better natural Philosophers, I have no Reason to be under Confusion of Face for them.

" Their Opinion is a Sign they have travelled *far* at *home*.

" Let them take a Trip to *Hungary*, and Visit the Mines where the Quicksilver is dug ; they may there see Slaves working entirely naked, to prevent the stealing this precious Jelly of Metals, as it may be called ; yet every Day swallow so much, that they buy a Choppin of Drink with it at Night.

" Several Physicians have enquired of my Patients, To what

End do I give it? Wherein can the Efficacy or Power of it consist? If they do not know, what follows may serve for Instruction:

"First, it secures the Patient from all Vermicular Diseases, of which no Practitioner can be sufficiently appriz'd, that has not spent some Time in hot Climates.

"Next, it opens all Obstructions, which are supposed to be another general Cause of Diseases.

"Lastly, it makes a pure Balsam of the Blood, beyond all other things in the Creation. Otherwise, why cannot Venereal Ulcers be cured without it? We often see those Sores in a Salivation grow well, without the Help of a Surgeon.

"I Desire to know Why I am called *The Quicksilver Doctor*, by way of Derision? Pray do not you, Gentlemen Physicians, Surgeons, and Apothecaries, prescribe it almost every Day of your Lives? I aver you do: Only you disguise it; and I give it in such an open honest Manner, that my Patient cannot be deceiv'd in taking it. Let me ask you, What is your Æthiops Mineral? Is it not Quicksilver ground to a black Powder, with Brimstone, and in as great Esteem with you as any of your Medicines? A very ingenious Physician says, This is like striking a Man with your Sword in the Scabbard; and were it possible to have found a worse Menstruum than Sulphur, I do not know whether it ought not even then to have been tried. Certainly this Medicine shows a more than common Virtue, which can thus powerfully exert itself when bound down by so contrary a Quality."

The unrivalled therapeutic powers of this protean drug are, of course, fully demonstrated by a copious and most instructive selection of illustrated cases. In his hands, it cured the "King's Evil, or Scrofula," "Eliphantiasis"—"The worst and most obstinate of Cutaneous Diseases," "Itch or Pruritus," "Diseases of the Stomach"—"Crude Mercury, taking an Ounce every Day, exceeds all, taken in any Vehicle," and various "Diseases of the Intestines." Some of the latter are dismissed with a curt confidence which offers a startling contrast to the descriptions and comments offered in the "Manuals" and "Systems" of the twentieth century:—

"*The* Iliac Passion.

"You need go no further for the Cure of this fatal Disease than to take a Pound or a Pound and half of Crude Mercury."

"*The* Streight Gut,

"Is often infested with little white flat Worms, call'd *Ascarides*, which are destroy'd by the following Clyster: Boil Quicksilver in Water in an Earthen Pot for two Hours; give it by way of Clyster."

The beneficial effects on persistent Asthma (!) which the use of quicksilver yielded in the hands of Dr. Dover were hardly less than magical. He prints several letters testimonial—written by grateful patients, and their friends or relations. One is from a Mr. Balam: it includes the following:—

". . . my Asthma has been from my infancy, and at different Times has afflicted me under all the various Shapes that Distemper exhibits in all the Patients I ever yet convers'd with, and that I never found any very sensible Relief from Physick. Some Time in *December* last was Twelve months, you advised me to take Quicksilver: I happily resolv'd to follow this Advice, and immediately found great Relief. Other Disorders, after some Time using it, intervening, occasion'd some Interruptions in my Course; and from *June* till *October*, being in the Country, I quite forbore the Use of it; but at that Time I again began taking it—an Ounce per Day, and have hitherto continued it with very few Intermissions: The Consequence of which is, that from the first Time of taking it, to this Instant, I never had any violent Fit; and during all the last Winter I have not been confined, otherwise than through Precaution, to avoid the Inclemencies of very bad Weather, or upon slight Attacks, when Rest is always preferable to any the least Motion. . . ."

And the efficacy of this wonderful remedy in obscure—and previously unmanageable—cases of "*fever*" was equally remarkable, as the following epistle will be found to testify:—

"Sir,—Though a Stranger to the Nature of Quicksilver, and its Manner of Operation; yet being fully convinced of its Power and Advantage from Experience, (which is generally esteemed the best Master), I think I should be ungrateful to God, and unjust to you and Mankind, should I be silent amidst the Clamours and Artifices which are made use of to lessen your Reputation, and deter the World from being benefited by one of the best Remedy's, perhaps, in Physicks, if I may be allowed to speak what I know: And I have had a long and frequent Experience of it in many Cases in my own Family; more particularly in a Niece of mine, who was with me some Time for Education, who, from a Fever which she for years together was annually subject to, and was so reduced, that her life was despaired of, she finding no Benefit from all she took; you may remember, Sir, you was called in, and by taking of Quicksilver by your Advice for fourteen Mornings together, and afterwards *Mynsicht's* Elixir of Vitriol, with frequent Bleeding, she was restored to, and, by GOD's Blessing, still enjoys a healthy Constitution. I had likewise a Nephew, who lay three Weeks in a most languishing Condition; his Body was distorted, his Hip and Shoulder being almost drawn together; no Help could be found (though no Advice or Assistance was wanting), till, by your Direction, he took Quicksilver, which in three Mornings set him perfectly strait, and has remained so ever since. If you think making this publick may be of any Service, you have my free Consent to do with it as you will, who am,

"SIR,
"Your most obliged humble Servant,
"JO. POTT.

"To Dr. Thomas Dover,
"These."

Still more startling were the benefits derived from the ingestion of large doses of this wonderful remedy in some inveterate cases of various diathetic disorders. The following is a fair specimen:

"SIR,—I had the Gout in my Stomach and Bowels for a considerable Time, insomuch that I had two Physicians with me for six Weeks: They gave me all the heating Medicines they could contrive or think of; but all to no Purpose; so that at the last, I was brought to extreme Faintings and Cold Sweats that I wetted a Pair of Sheets in an Hour.

"A very worthy neighbouring Gentleman hearing of my miserable Condition came to see me, and perswaded me to take two Ounces of Quicksilver; which I accordingly did, and found Relief thereby in four Hours time, and in three Days all the gouty Matters were thrown down into my Feet. Upon which I persisted in taking of Quicksilver; and have ever since enjoyed a good State of Health, which is for near two Years Space. I am,

"SIR,
"Your humble Servant,
"HARVEY.

"Calne, in Wiltshire,
"*April* 20, 1733.
"To Dr. Dover in London."

Perhaps the acme of the progress of the triumphant chariot of Quicksilver was reached in the conquest of spasmodic asthma, to which the following striking document bears convincing testimony:—

"LEWSHAM, *Feb.* 14*th*,
"1732-3.

"SIR,—A Gentleman the other Day put a Book into my Hands, that lately came out against taking of Quicksilver: I think the Author very bold, since there are so many living Evidences that have received such Benefit, when nothing else would afford them Ease.

"I have been troubled with an Asthma from my Infancy; and have consulted many of the most noted Physicians of my Time, both at Home and Abroad, without the least Relief. My Fits used to attack me in fourteen, sixteen, or twenty-one Days, without being able to go to Bed for two or three Days and Nights. On the Twenty-first of *April* last, in a violent Fit, I took an Ounce of Crude Mercury, and have continued it. I am so happy to know nothing of an Asthma since *June* last, notwithstanding I have caught several severe Colds this Winter.

"I make bold to trouble you with this for the sake of other poor Sufferers, least they might be frighten'd from so beneficial a Remedy to Mankind.

"I need not acquaint you, Sir, of the safety of the Quicksilver; but I assure you, in the Absence of my Fits, all my Life-Time, I lived freely; and since my taking it, have never gone one Jot out of my Road either in Eating or Drinking; but never knew what it was to enjoy Health before.

"I thought myself obliged to return you my hearty Thanks: For 'tis to you I enjoy my present happy Condition, and shall always be proud to acknowledge it; and know many more are ready to destroy all Prejudices against it. I am,

"SIR,
"Your most obliged humble Servant,
"WILL. MOSES.

"P.S.—I am removed from *Greenwich* to *Lewsham*; shall always be proud to kiss your Hand.

"To Dr. Dover, in *London*.
"These."

Even the most various types of constitutional disease were made amenable to the philanthropic antagonism of this metallic panacea. We find one Benj. Benson writing from Piccadilly, May 10, 1733, to inform Dr. Dover :—

"I have for many Years been troubled with strong Scorbutick Humours, but more particularly so all last Summer: And the Beginning of the Winter the Humour was so strong and violent, in and about my Right Knee, that the Joint was almost quite stiff, so that I could scarce walk; and it was with great Pain and Difficulty when I went up any Steps that were anything higher than ordinary: And at Night I had a good deal of Pain, and Uneasiness in turning myself in Bed. After my first Application to you, about last *Christmas*, I immediately took according to your Direction, one Ounce of Crude Mercury every Morning. By the Time I had taken twelve or fourteen Ounces, I found my self abundantly better; and before I had taken two Pounds, I was quite well: All the Stiffness, Uneasiness, and Pain, I had in my Knee was quite gone, and my Leg as well and strong, I think, as ever it was in my life. For several Years I used to have a good deal of white Scurf in my Hands, in the Spring; and therefore I thought proper to continue taking the Crude Mercury; and now, this last Spring, I have not the least Scurf in my Hands or anywhere whatsoever."

Hysteria, hypochondriasis, lunacy even! pseudorexia, constipation, colic, gout, gravel, stone, the train of diseases which followed bedding between damp sheets, and a host of other physical ailments—many of them among the most formidable to which flesh is heir—all yielded with corresponding flexibility to the antagonistic pressure imposed by the giant Mercury!

I have now, perhaps, given the reader a sufficient sample of each of the more conspicuous (published) items of the theory and practice of the "inventor of Dover's powder." The fashionable metropolitan physician of the present day will, of course, utterly repudiate some of his special modes of treatment. The humanitarian scientist will disown any brotherhood with the pirate-physician. The religionist will shrink with horror from the record of his sacrilegious profanation of the Church in which the murdered and plundered inhabitants of Guayaquil had been wont to assemble, to worship and pray to their Divine Creator. But the average medical practitioner will still admit that he owes a great deal to the man who invented *Dover's powder*, and no amount of criticism or blame will ever extinguish the gratitude of juvenile humanity to the discoverer of the primordial germ of *Robinson Crusoe.*

SANITARY AND METEOROLOGICAL NOTES.

Compiled by the Editor.

Vital Statistics

For four weeks ending Saturday, December 31, 1904.

IRELAND.

Twenty-two Town Districts.

The average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending December 31, 1904, in the Dublin Registration Area and the twenty-one principal provincial Urban Districts of Ireland was 23.8 per 1,000 of their aggregate population, which for the purposes of these returns is estimated at 1,093,289. The deaths registered in each of the four weeks ended Saturday, December 31, and during the whole of that period in the several districts, alphabetically arranged, correspond to the following annual rates per 1,000:—

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	Dec. 10	Dec. 17	Dec. 24	Dec. 31			Dec. 10	Dec. 17	Dec. 24	Dec. 31	
22 Town Districts	22.7	22.8	21.7	23.8	22.8	**Lisburn** -	22.7	4.5	22.7	18.2	17.0
Armagh -	20.6	20.6	27.5	41.2	27.5	**Londonderry**	23.9	27.7	18.9	12.6	20.8
Ballymena	9.6	19.2	9.6	28.7	16.8	**Lurgan** -	13.3	22.1	17.7	39.8	23.2
Belfast -	24.3	21.7	20.6	23.6	22.6	**Newry** -	—	16.8	21.0	21.0	14.7
Clonmel -	5.1	25.6	20.5	25.6	19.2	**Newtownards**	22.9	11.4	45.8	28.6	27.2
Cork -	24.7	19.9	20.5	18.5	20.9	**Portadown**	25.8	20.7	15.5	5.2	16.8
Drogheda -	16.3	24.5	16.8	12.3	17.4	**Queenstown**	13.2	13.2	19.8	6.6	13.2
Dublin - (Reg. Area)	25.2	25.3	24.5	25.0	25.0	**Sligo** -	24.0	9.6	24.0	24.0	20.4
Dundalk -	31.9	16.0	16.0	23.9	22.0	**Tralee** -	5.3	10.6	5.3	37.0	14.6
Galway -	7.8	7.8	46.6	38.8	25.2	**Waterford**	15.6	21.4	17.5	25.3	20.0
Kilkenny -	9.8	14.7	9.8	29.5	16.0	**Wexford** -	28.0	9.3	9.3	56.0	25.6
Limerick -	13.7	45.1	19.1	17.8	23.9						

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The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases, registered in the 22 districts during the week ended Saturday, December 31, 1904, were equal to an annual rate of 3.0 per 1,000, the rates varying from 0.0 in fourteen of the districts to 9.3 in Wexford—the 12 deaths from all causes in that district including one from scarlet fever and one from whooping-cough. Among the 162 deaths from all causes in Belfast are one from small-pox, 17 from measles, 2 from scarlet fever, 2 from diphtheria, 2 from enteric fever, and 3 from diarrhœal diseases.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of this area is 378,994, that of the City being 293,385, Rathmines 33,203, Pembroke 26,025, Blackrock 8,759, and Kingstown 17,622.

In the Dublin Registration Area the births registered during the week ended December 31, amounted to 220—106 boys and 114 girls; and the deaths to 187—92 males and 95 females.

DEATHS.

The deaths registered represent an annual rate of mortality of 25.7 in every 1,000 of the population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the area, the rate was 25.0 per 1,000. During the fifty-two weeks ending with Saturday, December 31, the death-rate averaged 24.5, and was 1.3 below the mean rate for the corresponding portions of the ten years 1894–1903.

There were 16 deaths from measles, one from scarlet fever, 2 from whooping-cough, 2 from enteric fever, and 6 from diarrhœal diseases. The deaths from measles in the 3 weeks preceding numbered 10, 6, and 10, respectively.

Croupous pneumonia caused 2 deaths, broncho-pneumonia 5, and *pneumonia* 5.

The 30 deaths from tuberculous disease include 6 from tubercular phthisis, 15 from *phthisis*, 3 from tubercular meningitis, one from tabes mesenterica, and 5 from other forms of the disease.

Five deaths were caused by carcinoma, and 2 by *cancer* (*malignant disease*).

The deaths of 2 infants were attributed to premature birth.

Diseases of the brain and nervous system caused 9 deaths, including 6 (all of children under 5 years of age) from *convulsions.*

There were 23 deaths from diseases of the heart and blood-vessels.

Of the 35 deaths attributed to diseases of the respiratory system (exclusive of the pneumonias), 30 were caused by bronchitis.

Two deaths were caused by accidental violence and one by homicide.

In 8 instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases include the deaths of 4 children under 5 years of age (including 3 infants under one year old).

Sixty-six of the persons whose deaths were registered during the week were under 5 years of age (40 being infants under one year, of whom 4 were under one month old), and 49 were aged 60 years and upwards, including 27 persons aged 70 and upwards, of whom 8 were octogenarians, and 2 (females) were stated to have been aged 91 and 110 years respectively.

The Registrar-General points out that the names of the causes of death printed above in italics should be avoided whenever possible in Medical Certificates of the cause of death.

STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

The usual returns of the number of cases of infectious diseases notified under the "Infectious Diseases (Notification) Act, 1899," as set forth in the following table, have been furnished by Sir Charles Cameron, C.B., M.D., Medical Superintendent Officer of Health for the City of Dublin; Mr. Fawcett, Executive Sanitary Officer for Rathmines and Rathgar Urban District; Mr. Manly, Executive Sanitary Officer for Pembroke Urban District; Mr. Heron, Executive Sanitary Officer for Blackrock Urban District; Dr. Byrne Power, Medical Superintendent Officer of Health for Kingstown Urban District; and Dr. Whitaker, Medical Superintendent Officer of Health for the City of Belfast.

Table showing the Number of Cases of Infectious Diseases notified in the Dublin Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfast, during the week ended December 31, 1904, and during each of the preceding three weeks. An asterisk (*) denotes that the disease in question is not notifiable in the District.

Cities and Urban Districts	Week ending	Small-pox	Measles	Rubella, or German Measles	Scarlet Fever	Typhus	Relapsing Fever	Diphtheria	Membranous Croup	Continued Fever	Typhoid or Enteric Fever	Erysipelas	Puerperal Fever	Varicella	Whooping-cough	Cerebro-spinal Meningitis	Total
City of Dublin	Dec. 10	–	*	*	8	–	–	3	–	3	9	18	–	*	*	*	41
	Dec. 17	–	*	*	6	–	–	–	–	4	8	14	–	*	*	*	32
	Dec. 24	–	*	*	6	–	–	5	–	2	7	13	–	*	*	*	33
	Dec. 31	–	*	*	2	–	–	3	–	2	2	6	–	*	*	*	15
Rathmines and Rathgar Urban District	Dec. 10	–	*	*	1	–	–	–	–	–	–	2	–	*	*	–	3
	Dec. 17	–	*	*	–	–	–	–	–	–	–	–	–	*	*	–	–
	Dec. 24	–	*	*	1	–	–	2	–	–	2	1	–	*	*	–	6
	Dec. 31	–	*	*	1	–	–	1	–	–	1	–	–	*	*	–	3
Pembroke Urban District	Dec. 10	–	12	–	4	–	–	1	–	–	1	–	–	–	–	*	18
	Dec. 17	–	19	–	1	–	–	–	–	–	–	–	–	–	–		20
	Dec. 24	–	6	–	1	–	–	–	–	–	–	–	–	–	3		10
	Dec. 31	–	5	–	–	–	–	–	–	–	–	–	–	–	1	*	6
Blackrock Urban District	Dec. 10	–	–	*	–	–	–	–	–	–	–	–	–	*	*	*	–
	Dec. 17	–	–	*	–	–	–	–	–	–	–	–	–	*	*	*	–
	Dec. 24	–	–	*	–	–	–	–	–	–	1	–	–	*	*	*	1
	Dec. 31	–	–	*	–	–	–	–	–	–	–	–	–	*		*	–
Kingstown Urban District	Dec. 10	–	*	*	–	–	–	–	–	–	–	–	–	*	*		–
	Dec. 17	–	*	*	–	–	–	–	–	–	–	–	–	*	*		–
	Dec. 24	–	*	*	–	–	–	–	–	–	–	1	–	*	*	*	1
	Dec. 31	–	*	*	–	–	–	–	–	–	–	–	–	*	*	*	–
City of Belfast	Dec. 10	7	*	*	10	–	–	4	2	11	7	16	1	*	*		58
	Dec. 17	5	*	*	7	–	–	4	2	14	6	11	1	*			50
	Dec. 24	11	*	*	11	–	–	3	–	3	11	8	–	*	*		47
	Dec. 31	4	*	*	16	–	–	1	2	7	4	7	–	*	*	–	41

Cases of Infectious Diseases under Treatment in Dublin Hospitals.

Forty-eight cases of measles were admitted to hospital during the week ended Saturday, December 31, 1904, 9 were discharged, there were 10 deaths, and 131 patients remained under treatment at its close.

Nine cases of scarlet fever were admitted to hospital, 4 were discharged, there was one death, and 69 cases remained under treatment at the close of the week. This number does not include 14 convalescents from scarlatina who remained under treatment at Beneavin, the Convalescent Home of Cork-street Fever Hospital, Dublin.

Two cases of diphtheria were admitted to hospital, there was one death, and 20 cases remained under treatment at the close of the week.

Eleven cases of enteric fever were admitted to hospital, 8 were discharged, there was one death, and 46 cases remained under treatment in hospital at the close of the week.

In addition to the above-named diseases, 5 cases of pneumonia were admitted to hospital, 8 patients were discharged, there were 2 deaths, and 17 cases remained under treatment at the end of the week.

ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, December 31, 1904, in 76 large English towns, including London (in which the rate was 21.0), was equal to an average annual death-rate of 22.4 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 21.6 per 1,000, the rate for Glasgow being 24.2, and for Edinburgh 19.3.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ *N., Long.* 6° 15′ *W., for the Month of December,* 1904.

Mean Height of Barometer,	29.859 inches.
Maximal Height of Barometer (18th, at 9 p.m.),	30.550 ,,
Minimal Height of Barometer (12th, at 4 a.m.),	28.900 ,,
Mean Dry-bulb Temperature,	42.9°.
Mean Wet-bulb Temperature,	41.1°.
Mean Dew-point Temperature,	38.9°.
Mean Elastic Force (Tension) of Aqueous Vapour,	.241 inch.
Mean Humidity	86.5 per cent.
Highest Temperature in Shade (on 4th),	59.0°.
Lowest Temperature in Shade (on 22nd),	28.2°.
Lowest Temperature on Grass (Radiation) (on 8th, 10th and 11th),	25.8°.
Mean Amount of Cloud,	58.8 per cent.
Rainfall (on 17 days),	1.502 inches.
Greatest Daily Rainfall (on 9th),	.439 inch.
General Directions of Wind,	W., S.W., S.E.

Remarks.

An open, dull month, with much gloom and fog after the 18th. Gales occurred early in the month—on the 4th, 5th, and 9th, and not again until the close—on the 29th and 30th. The first stormy period was ushered in by unusual warmth, the mean temperature of Sunday, the 4th, being 54.1°, or about 12° above the average for the time of year. The storm of the 29th–30th was caused by a deep depression, which passed rapidly south-eastwards from the N. of Scotland to Central Europe. It brought a sudden and extreme fall of temperature to Scandinavia and Germany. An anticyclonic period from the 18th to the 24th caused dense fogs and frost in England, while the weather remained open over the greater part of Ireland and Scotland. In the City of Dublin the estimated duration of bright sunshine was 55.25 hours, compared with 53.25 hours in December, 1902, and 67.25 hours in 1903—the daily average being 1.8 hours against 1.72 hours in 1902, and 2.17 hours in 1903.

In Dublin the arithmetical mean temperature (43.9°) was 2.2° above the average (41.7°); the mean dry-bulb readings at 9 a.m. and 9 p.m. were 42.9°. In the forty years ending with 1904, December was coldest in 1878 (M. T. = 32.8°), and in 1874 (M. T. = 36.8°); warmest in 1898 (M. T. = 47.6°), and in 1900 (M. T. = 47.1°).

The mean height of the barometer was 29.859 inches, or 0.016 inch below the corrected average value for December—namely, 29.875 inches. The mercury rose to 30.550 inches at 9 p.m. of the 18th, and fell to 28.900 inches at 4 a.m. of the 12th. The observed range of atmospheric pressure was, therefore, 1.650 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 42.9°, or only 1.2° below the value for November, 1904. Using the formula, *Mean Temp.* = *Min.* + (*Max.*—*Min.* × .52), the value was 44.0° or 2.1° above the average mean temperature for December, calculated in the same way in the thirty years, 1871–1900, inclusive (41.9°). The arithmetical mean of the maximal and minimal readings was 43.9°, compared with a thirty years' average of 41.7°. On the 4th the thermometer in the screen rose to 59.0°—wind, S.W.; on the 22nd the temperature fell to 28.2°—wind, calm. The minimum on the grass was 25.8° on the 8th, and also on the 10th and 11th. There was frost in the screen on 5 days, and 13 nights of frost on the grass were recorded.

The rainfall was 1.502 inches, distributed over 17 days. The average rainfall for December in the thirty-five years, 1866–1900, was 2.390 inches, and the average number of rainy days was 18. The rainfall, therefore, and also the rainy days were below the average. In 1876 the rainfall in December was very large—7.566 inches on 22 days. In 1868 (which was otherwise a fine and dry year), 4.749 inches fell on as many as 27 days. On the other hand, in 1867, only .771 inch was measured on 13 days; in 1885, only .742 inch on 10 days; in 1892, only .795 inch on 10 days; and in 1871, only .797 inch on 15 days. In 1903, 1.586 inches of rain fell on 16 days.

High winds were noted on 12 days, and attained the force of a gale on five occasions—the 4th, 5th, 9th, 29th and 30th. The atmosphere was more or less foggy in Dublin on the 8th, 13th, 18th, 19th, 21st, 22nd, 23rd, 24th, 26th, 27th and 28th. Snow or sleet fell on the 8th and 12th. Lightning was seen on the 18th. A solar halo was seen on the 13th, a lunar halo on the 15th, and lunar coronæ appeared on the 19th and 20th.

The rainfall in Dublin during 1904 amounted to 22.180 inches on 189 days, compared with 31.601 inches on 228 days in 1903, 29.375 inches on 203 days in 1902, 26.075 inches on 179 days in 1901, 34.338 inches on 216 days in 1900, 27.737 inches on 186 days in 1899, 27.048 inches on 194 days in 1898, 29.344 inches on 211 days in 1897, 26.901 inches on 194 days in 1896, 31.242 inches on 194 days in 1895, 29.261 inches on 209 days in 1894, only 20.493 inches on 174 days in 1893, only 16.601 inches on 160 days in 1887, and a thirty-five years' average of 27.770 inches on 198 days.

Mr. Arthur Robert Moore, B.A., reports that at the Normal Climatological Station in Trinity College, Dublin, the mean height of the barometer was 29.860 inches, the range of atmospheric pressure being from 30.550 inches at 9 p.m. of the 18th to 28.946 inches at 9 a.m. of the 12th. The mean value of the readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 43.5°. The arithmetical mean of the daily maximal and minimal temperatures was 44.0°. The screened thermometers rose to 59.0° on the 4th, and fell to 29.0° on the 22nd. On this latter date the grass minimum was 25.9°, while on the 8th it was 19.8°. On the 1st the black bulb *in vacuo* rose to 80.2°. Rain fell on 16 days to the amount of 1.424 inches, the greatest fall in 24 hours being .390 inch on the 9th. The duration of bright sunshine, according to the Campbell-Stokes recorder, was 33.3 hours, of which 4.3 hours occurred on the 6th, and again on the 10th. The mean daily sunshine was 1.1 hours. The mean temperature of the soil at a depth of one foot was 42.1° at 9 a.m. and 42.3° at 9 p.m.; at a depth of 4 feet, it was 45.3° at 9 a.m. and also at 9 p.m.

Mr. R. Cathcart Dobbs, J.P., reports that at Knockdolian, Greystones, Co. Wicklow, the rainfall in December was 1.890 inches on 15 days, compared with 2.830 inches on 18 days in 1903, and 2.920 inches on only 11 days in 1902. Of the total amount .600 inch fell on the 9th, and .520 inch on the 8th. From January 1st to December 31st, 1904, rain fell at Knockdolian on 175 days, to the total amount of 25.462 inches. The corresponding figures for 1895 were 35.135 inches on 174 days; 1896, 36.102 inches on 169 days; 1897, 42.885 inches on 210 days; 1898, 30.546 inches on 171 days; 1899, 36.690 inches on 182 days; 1900, 42.716 inches on 191 days; 1901, 34.750 inches on 166 days; 1902, 40.021 inches on 168 days; and 1903, 35.900 inches on 211 days.

Mr. Robert O'B. Furlong, C.B., returns the rainfall at Cloneevin, Killiney, at 1.75 inches on 16 days. The maximal fall in 24 hours was .67 inch on the 9th. The average December rainfall of the 19 years (1885–1903) was 2.422 inches on 17.4 days. Snow and sleet fell on the 10th.

Dr. Arthur S. Goff reports that at Lynton, Dundrum, Co. Dublin, rain fell on 21 days to the amount of 2.14 inches, .75 inch being measured on the 9th. Temperature ranged from 57.0° on the 4th to 30.0° on the 22nd. The mean shade temperature was 43.1° Fahrenheit. In 1903, 2.21 inches of rain fell on 20 days.

At Wellesley-terrace, Cork, according to Mr. W. Miller, the December rainfall was 2.76 inches on 23 days, the measurement being 1.69 inches less than the average. The greatest daily rainfall was .78 inch on the 8th. The year's rainfall at this station was 37.22 inches on 214 days, the total being 1.28 inches under the average, and the rainy days being 17 in excess. The rainfall was 15.55 inches less than that of 1903, which had been the largest in Cork since 1872, when the measurement was 61.5 inches.

Mr. John Read, of Claremount, Carrickmines, Co. Dublin, reports that the rainfall at that place in December was 2.30

inches. The total rainfall for 1904 at Claremount was 22.36 inches.

At the Railway Hotel, Recess, Connemara, Co. Galway, the rainfall measured by Mr. A. A. Smith was 5.717 inches on 20 days, compared with 9.413 inches on 26 days in December, 1899, 7.810 inches on 27 days in 1900, 7.667 inches on 20 days in 1901, 4.760 inches on 20 days in 1902, and 6.335 inches on 15 days in 1903. On the 16th .640 inch fell, on the 10th .630 inch, and on the 15th .620 inch.

At the Ordnance Survey Office, Phœnix Park, Dublin, 1.535 inches fell on 17 days, .325 inch being recorded on the 9th. The total amount of sunshine at this station was 56.8 hours, the most on one day being 6.2 hours on the 18th.

Dr. B. H. Steede reports that at the Royal National Hospital for Consumption, Newcastle, Co. Wicklow, rain fell on 13 days in December to the amount of 2.246 inches. The heaviest falls in 24 hours were .670 inch on the 9th and .487 inch on the 8th. The highest temperature was 55.3° on the 17th, the lowest was 30.5° on the 22nd. At this Normal Climatological Station the total rainfall during the year 1904 was 30.149 inches on 191 days. In 1903 it had been 41.820 inches on 231 days.

Dr. J. Byrne Power, F.R. Met. Soc., Medical Superintendent Officer of Health, Kingstown, reports that the mean temperature at that health resort was 44.9°, being 0.7° above the average for the month during the previous 6 years, the extremes being—highest, 59.2° on the 16th and 17th; lowest, 29.5° on the 22nd. At Bournemouth the mean was 43.8°, the extremes being—highest, 55° on the 5th and 17th; lowest, 23.0° on the 22nd and 23rd. The mean daily range of temperature was 10°, and at Bournemouth it was also 10°. The mean temperature of the sea at Sandycove bathing-place was 48.7°, being 1.9° above the average for the month during the previous 6 years. The relative humidity was 82 per cent., being 3 per cent. below the average for the month during the previous 3 years. The rainfall at Kingstown was 1.48 inches on 14 days, being 0.83 inch below the average for the month during 14 previous years (1873–83 and 1901–03); at Bournemouth it was 3.79 inches on 21 days. The total duration of bright sunshine was 55.2 hours, as compared with 56.8 hours at the Ordnance Survey Office, Phœnix Park, 40.6 hours at Valentia, 40.4 hours at Parsonstown, 42.9 hours at Southport, and 39.4 hours at Eastbourne.

The total annual rainfall at Kingstown for 1904 amounted only to 20.01 inches, being 8.73 inches below the average for 14 previous years (1873–83 and 1901–03), and the absolute lowest of which there is a record in Kingstown. The greatest annual rainfall during these previous 14 years was that of 1880, amounting to 37.13 inches, and the lowest 23.31 inches in 1873. During 1904 the greatest monthly precipitation was 3.09 inches on 16 days in February, and the lowest that for October, amounting only to 0.19 inches on 9 days. This latter is the lowest quantity for any month on record, the next lowest being that of January, 1876, amounting to 0.42 inches. The total duration of bright sunshine at Kingstown during 1904 was 1527.5 hours (84 hours above the average for the previous 3 years), as compared with 1576.2 hours at the Ordnance Survey Office, Phœnix Park, 1270.9 hours at Parsonstown, 1281.9 hours at Valentia, 1474.4 hours at Southport, and 1753.4 hours at Eastbourne.

RAINFALL IN 1904

At 40 Fitzwilliam-square, West, Dublin.

Rain Gauge :—Diameter of Funnel, 8 in. Height of top—Above ground, 1 ft. 4 in. ; above sea level, 50 ft.

Month	Total Depth	Greatest Fall in 24 Hours		Number of Days on which .01 or more fell
	Inches	Depth	Date	
January, -	2.535	.550	3rd	19
February, -	3.312	.458	12th	17
March, -	2.091	.518	7th	19
April, -	1.118	.190	2nd	19
May, -	2.685	1.092	31st	18
June, -	1.076	.247	9th	10
July, -	1.088	.319	15th	15
August, -	2.903	.903	30th	18
September, -	2.339	1.197	12th	17
October, -	.454	.216	16th	11
November, -	1.077	.362	6th	9
December, -	1.502	.439	9th	17
Year, -	22.180	1.197[a]	Sept. 12th	189

The rainfall was 22.180 inches, or 5.590 inches less than the average annual measurement of the thirty-five years, 1866–1900, inclusive—viz., 27.770 inches.

[a] Maximum.

It is to be remembered that the rainfall in 1887 was very exceptionally small—16.601 inches—the only approach to this measurement in Dublin being in 1870, when only 20.859 inches fell; in 1884, when the measurement was 20.467 inches; and in 1883, with its rainfall of 20.493 inches. In nine of the thirty-five years in question the rainfall was less than 26 inches.

The scanty rainfall in 1887 was in marked contrast to the abundant downpour in 1886, when 32.966 inches—or as nearly as possible double the fall of 1887—fell on 220 days. In 1900 the rainfall was 34.338 inches, or 6.568 inches in excess of the average for the thirty-five years, 1866–1900. Only twice since these records commenced has the rainfall in Dublin exceeded that of 1900—namely, in 1872, when 35.566 inches fell on 238 days, and in 1880, when 34.512 inches were measured on, however, only 188 days. In 1903 the rainfall was 31.601 inches on 228 days.

In 1904 there were 189 rainy days, or days upon which not less than .005 inch of rain (five-thousandths of an inch) was measured. This was 9 under the average number of rainy days, which was 198 in the thirty-five years, 1866–1900, inclusive. In 1868 and 1887—the warm, dry years of recent times—the rainy days were only 160, and in 1870 they were only 145.

In 1904 the rainfall in 24 hours, from 9 a.m. to 9 a.m., on two occasions exceeded one inch—the maximum being 1.197 inches on September 12th. On May 31st the measurement was 1.092 inches. On no occasion in 1893 did one inch of rain fall on a given day in Dublin. In 1894 falls of upwards of an inch of rain in 24 hours were recorded on 4 occasions—viz., May 15th (1.330 inches); July 24th (1.560 inches); August 25th (1.369 inches); and October 23rd (1.042 inches). In 1895, 1.802 inches fell on January 12th; 1.014 inches on July 24th: and 1.256 inches on July 25th. In 1896, 1.563 inches fell on July 8th; 2.020 inches on July 24th; and 1.388 inches on December 8th. In 1897, 1.166 inches fell on September 1st. In 1898, on November 23rd, 1.732 inches were measured. In 1899, the rainfall exceeded one inch on 4 occasions—viz., July 11th (1.402 inches); August 5th (2.227 inches): September 30th (1.042 inches), and December 28th (1.129 inches). In 1900, as in 1899, the rainfall exceeded one inch on 4 occasions—namely, July 27th (1.783 inches); August 2nd (2.135 inches); November 6th (1.103 inches); and November 27th (1.126 inches). In 1901, the rainfall only once exceeded one inch, but on that occasion (November 11th) the measurement was 2.037 inches. In 1902, 1.342 inches fell on July 25th, and 2.075 inches on September 2nd. In 1903 the maximal daily rainfall was .966 inch on September 10th. The excessive rainfall on September 2nd, 1902, is noteworthy—it amounted to 2.075 inches in Dublin (Fitzwilliam-square). It was the eighth occasion only since 1865—that is, in 40 years—upon which 2 inches have been measured in Dublin at 9 a.m. as the product of the preceding 24 hours' precipitation. The previous excessive falls were—August 13th, 1874 (2.482 inches); October 27th, 1880 (2.736 inches); May 28th, 1892 (2.056 inches); July 24th, 1896 (2.020 inches); August 5th, 1899 (2.227 inches); August 2nd, 1900 (2.135 inches); and November 11th, 1901 (2.037 inches).

Included in the 189 rainy days in 1904 are 23 on which snow or sleet fell, and 24 on which there was hail. In January hail was observed on 5 days, in February on 2 days, in March on 7 days, in April on 4 days, in May on 3 days, and in November on 3 days. Snow or sleet fell on 3 days in January, 5 days in February, 7 days in March, 2 days in both April and December, and 4 days in November. Thunder was heard once in May, July and August. Thunderstorms occurred once in February, July and August. Lightning was seen three times in August; once in June, July, and December.

The rainfall in the first six months was 12.817 inches on 102 days. The rainfall exceeded 3 inches only in February (3.312).

The rainfall was distributed quarterly as follows:—7.938 inches fell on 55 days in the first quarter, 4.879 inches on 47 days in the second, 6.330 inches on 50 days in the third, only 3.033 inches on 37 days in the fourth and last quarter.

More or less fog prevailed on 61 occasions—8 in January, 7 in February, 7 in March, 1 in April, 2 in May, 3 in July, 2 in August, 6 in September, 7 in October, 7 in November, and 11 in December.

High winds were noted on 127 days—13 in January, 11 in February, 12 in March, 17 in April, 9 in May, 11 in June, 6 in July, 13 in August, 11 in September, 9 in October, 4 in November. and 11 in December. The high winds amounted to gales (force 7 or upwards, according to the Beaufort scale) on 36 occasions—6 in January, 4 in February, 3 in March, 5 in April, 3 in May, 1 in June, 4 in August, 1 in September, 2 in October, 2 in November, and 5 in December.

Solar halos were seen on 8 occasions, a lunar halo on 4 nights.

Mr. Robert O'Brien Furlong, M.A., C.B., writes :—

The total number of inches of rain measured at Cloneevin, Killiney, in 1904, was 22.14 on 182 days.

The rainfall of 1904 was 6.19 inches, and the number of days on which .01 or upwards of an inch fell was 2, below the average of 19 years (1885–1903)—viz., 28.335 inches on 184 days.

The greatest amount measured in any month during 1904 was 3.56 inches on 20 days in February—the smallest, .29 inch on 12 days in October.

February is usually the month of lowest rainfall, the average being 1.800 inches on 13.7 days. October, on the other hand, is next to August the month of greatest rain, the average being 3.13 inches on 16.3 days.

The greatest number of days on which rain fell in any month was 20 in February—the lowest, 10 in November.

The heaviest fall in 24 hours was on May 31, when 1.07 inches fell. This was the only day on which 1 inch or upwards fell.

Snow, sleet, or hail was noticed on 11 days.

The rainfall of 1904 was one of the lowest recorded here since 1885, and ranks fourth in order. In 1887 the amount measured was 17.64 inches on 148 days ; in 1893, 18.05 inches on 176 days ; and in 1890, 19.93 inches on 181 days. The four highest yearly rainfalls recorded during the same period were—in 1900 = 35.35 inches on 205 days, in 1895 = 32.85 inches on 190 days, in 1894 = 32.64 inches on 196 days, and in 1903 = 32.44 inches on 219 days.

Abstract of Meteorological Observations taken at Dublin (40 *Fitzwilliam-square, West*) *during the Year* 1904.

MONTH	Abs. Max.	Date	Abs. Min.	Date	Mean Daily Max.	Mean Daily Min.	Rainfall	Rainy Days	Mean Height of Barometer	Highest Pressure	Date	Lowest Pressure	Date	Prevalent Winds
	°		°		°	°	"		"	"		"		
January -	54·8	27th	31·5	16th	47·5	37·6	2·535	19	29·813	30·757	22nd	28·757	14th	S.W., W.
February -	56·5	21st	30·0	17th	45·2	36·2	3·312	17	29·490	30·261	27th	28·620	13th	W., S.E.
March - -	60·8	19th	28·9	11th	48·2	37·5	2·091	19	29·958	30·446	23rd	29·264	29th	N.E., W.
April - -	62·0	27th	35·7	21st	55·9	42·2	1·118	19	29·884	30·318	21st	29·103	13th	W.
May - -	69·6	16th	37·5	8th	60·1	45·8	2·685	18	29·899	30·233	19th	29·502	1st	W., S.W., E.N.E.,
June - -	72·0	30th	45·1	27th	64·5	51·0	1·076	10	30·020	30·393	22nd	29·292	14th	E.N.E., W.N.W.,
July - -	74·7	30th	48·0	7th	68·3	54·9	1·088	15	29·968	30·290	17th	29·635	1st	E.N.E., W.S.W.
August - -	77·7	3rd	44·6	24th	67·2	52·9	2·903	18	29·971	30·250	8th	29·442	14th	S.W., W., N.W.
September -	71·6	5th	41·1	29th	63·0	50·5	2·339	17	30·003	30·308	23rd	29·576	5th	E.S.E.,S.S.E. S.W.
October - -	64·0	21st	34·3	27th	57·3	45·9	0·454	11	30·076	30·485	12th	29·364	5th	W., S.W.
November -	59·0	9th	27·3	22nd	50·3	40·3	1·077	9	30·068	30·527	16th	29·440	7th	W.
December -	59·0	4th	28·2	22nd	48·6	39·1	1·502	17	29·859	30·550	18th	28·900	12th	W., S.W., S.E.
Extremes, Totals, and Means	° 77·7	Aug. 3rd	° 27·3	Nov. 22nd	° 56·3	° 44·5	" 22·180	Days 189	" 29·916	" 30·757	Jan. 22nd	" 28·620	Feb. 18th	W., S.W.
					50·4°									

John William Moore, B.A., M.D., Dubl.; D.Sc. Oxon., F.R.C.P.I.;

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

The Formawn Inhaler.

WE have received specimens of this useful and ingenious inhaler from the London Chemical Works, London, S.E., together with a supply of formawn tablets for inhalation. These tablets are impregnated with chlormethylmenthyl ether, which is a compound of menthol, formaldehyde, and hydrochloric acid. When placed in hot water the formawn tablets develop menthol and formaldehyde, the vapours of which, when inhaled, act not only as an antiseptic but also as a sedative, so controlling a nasal, laryngeal, or bronchial catarrh. The inhaler consists of a small glass bottle with a fork-shaped tube, the two nozzles of which are introduced into the nostrils when the inhalation is made. The bottle or flask should be half filled with hot water, care being taken that the end of the central tube from which the two nozzles spring does not dip into the liquid. A formawn tablet is then put into the water, the inhaler is closed, and the contents are slightly shaken. The vapour, which is immediately produced, should be freely inhaled into the nostrils through the fork-shaped tube. One filling of the glass suffices for one or two days. The inhaler is always ready for use if the water is kept warm. This can be done by keeping it on a stove or by the side of a fire.

New Tabloids.

MESSRS. BURROUGHS, WELLCOME & COMPANY have lately added the following to their long list of preparations in "tabloid" form:—

"*Tabloid*" *Donovan Solution, min.* 5 (0.296 *c.c.*).—The conditions in which arsenious iodide is usually prescribed are generally of such a nature as to demand more or less protracted treatment. "Tabloid" Donovan Solution has been introduced to provide a reliable and convenient means of administering this agent, and presents such a degree of compactness that a bottle containing 100 tabloids can be comfortably carried in the waistcoat pocket. Hence doses may be taken regularly when the patient is following ordinary pursuits. Each product represents min. 5 (0.296 c.c.)

of liq. arsenii et hydrargyri iodidi, P.B., containing arsenious iodide and mercuric iodide of each gr. 1/22 (0.003 gm.). Dose: One to four, dissolved in a wineglassful of water, and taken as may be necessary. This tabloid is issued in bottles of 100.

"Tabloid" Reduced Iron Compound and "Tabloid" Reduced Iron and Rhubarb Compound.—A convenient means of administering reduced iron with extract of nux vomica is afforded by "Tabloid" Reduced Iron Compound. Each contains:—Reduced iron, gr. 2 (0.13 gm.); extract of hyoscyamus, gr. 1 (0.065 gm.); extract of nux vomica, gr. ½ (0.032 gm.); oil of caraway, min. ¼ (0.015 c.c.). In practice it is often convenient to prescribe a slight variation of this formula in order to combat indigestion and constipation. For this purpose "Tabloid" Reduced Iron and Rhubarb Compound is issued. Each contains:—Reduced iron, gr. 2 (0.13 gm.); extract of hyoscyamus, gr. 1 (0.065 gm.); extract of nux vomica, gr. ½ (0.032 gm.); compound rhubarb pill, gr. 1 (0.065 gm.); oil of caraway, min. ¼ (0.015 c.c.). It will be observed that both products contain the same doses of reduced iron and extract of nux vomica, and both may be therefore ordered for a patient with a direction to take one or other, or both, in such proportions as from time to time meet the digestive difficulties of the case. Dose: One to two, swallowed with water, twice or thrice daily with or after food. Each is issued in bottles of 25 and 100.

LINIMENT FOR RHEUMATISM.

"NOUVEAUX REMÈDES" for November 24, 1904, gives this formula:—℞: Ethyl salicylate, 15 grammes (½ ounce); chloroform, 3 grammes (45 minims); menthol, 2 grammes (30 grains); compound oil of hyoscyamus (N.F.), 60 grammes (2 ounces). M. To be applied on flannel and covered with a firm bandage. We have substituted, in this application, the compound oil of hyoscyamus of the National Formulary, for the *Baume tranquille* of the Codex, a more complex preparation, but possessing much the same properties.—*New York Med. Journal and Philadelphia Med. Journal*, December 17, 1904. [The *Baume tranquille* of the "Codex medicamentarius" or "Pharmacopée française" is a very complex preparation, containing no less than nineteen ingredients. The most active of these are belladonna, hyoscyamus, aconite, tobacco, poppy, and stramonium leaves.—EDITOR.]

THE DUBLIN JOURNAL
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MARCH 1, 1905.

PART I.

ORIGINAL COMMUNICATIONS.

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ART. VII.—*Hæmatological Observations. I.—A Case of Chronic Lymphæmia.*[a] [From the Pathological Laboratory, Mater Misericordiæ Hospital.] By E. J. McWEENEY, M.A., M.D.; Professor of Pathology, C. U. Medical School; Pathologist, Mater Misericordiæ Hospital.

I HAVE been fortunate in observing during the last couple of years a series of cases representing most of the recognised morbid conditions of the blood. These cases occurred for the most part in the wards of the Mater Misericordiæ Hospital, to which I am pathologist.

In view of the great interest attaching to them, and of the rapid development of our knowledge as to their mutual relations, classification, and pathogenesis which we owe to the methods associated with the name of Ehrlich, I have thought it well to lay my observations before the Royal Academy of Medicine in Ireland. When giving notice of this paper I intended to include all the cases in the one comparative study, but on looking over the mass of notes and specimens which I have accumulated I saw that I could not adequately deal with them in the time at my disposal, and I have accordingly decided to confine myself on this occasion to the description of two cases of lymphatic leukæmia, one of chronic and one of acute character.

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[a] Read in the Section of Pathology, Royal Academy of Medicine in Ireland, October 24, 1904.

J. N., aged fifty-five, farmer, was admitted Sept. 2nd, 1904, to Mr. Blayney's Ward, complaining of abdominal tumour. Patient was a tall, spare man, with pallid face and stooping shoulders. He had no serious illness previous to the present attack. In January last he fell from a hay-rick, when his left side struck the handle of a hay-fork, since which time he felt uncomfortable in that region. About Easter he began to notice his neck swollen, and first detected a distinct tumour in the left side of the abdomen on May 20th. He complained of dragging sensations, dyspnœa on exertion, loss of appetite and general weakness.

On examination the left side of the abdomen was found occupied by a large solid tumour, evidently the spleen, extending down two inches below the umbilicus. The liver was also distinctly enlarged. On both sides of the neck was a chain of enlarged lymphatics extending from the suboccipital region to the clavicle. The glands were harder and smaller on the right side. Both axillæ also contained glands, which were small and superficial on the right side, whilst on the left they formed a mass as big as a hen's egg, more deeply situated. In the right groin was a mass of glands, each of which was nearly as big as a walnut. Those in the left groin were quite small and shot-like. He did not complain of hæmorrhage from the mucous membranes, but there was a spot of suffusion under one of the conjunctivæ. The blood count, which I made on the day after admission, gave reds, 3,908,000; whites, 163,200; whereupon the case was diagnosticated as leukæmia and removed to a medical ward under the care of Dr. Martin Dempsey. The blood was noticed to be pale, watery, and coagulated slowly. The differential leucocyte count made two days later yielded no less than 96 per cent. of mononuclears, of which 81 per cent. were lymphocytes and 15 per cent. large mononuclears, whilst only 4 per cent. were polymorphs, the relation of mono- to poly-nuclears being as 24 to 1. The following table gives the details of the several blood-counts that were made. In the first differential count, which was made on a Jenner-stained preparation, it seemed possible to differentiate between lymphocytes and large mononuclears; the former were smaller, averaging about 8 μ, but reaching in some cases 10.8 μ, with deeply-staining nucleus and scanty hyaline protoplasm; the latter were larger, 11 to 15 μ, with larger, less deeply-staining nucleus, which was often coarsely lobulated. Their protoplasm was more abundant, and in triacid and Jenner preparations it often presented a minute basophilic granulation. In hæmatoxylin-eosin preparations the distinction between large and small lymphocytes could not, however, be maintained. Intermediate forms occurred in every field, and I was obliged to abandon the attempt to discriminate between these two varieties of leucocytes. Granule cells were extremely few; at no time did the finely granular polymorphs ever reach 10 per cent. of the total leucocytes. Myelocytes were extremely scarce, and such as were found seemed very fragile. I missed them altogether from the preparations made towards the end of the case, though they occurred in the lung-blood taken *post mortem*. Eosinophiles were even scarcer. Out of several hundred leucocytes examined on a hæmatoxylin-eosin preparation only one was seen, and it was remarkable in several respects. It was 13.2 μ. in diameter, with a small deeply-staining nucleus, 6.2 μ. in diameter, nearly central in position. The aspect of the cell was totally unlike that of any eosinophile I can remember to have seen. The nucleus exactly resembled that of the neighbouring lymphocytes. No undoubted mast-cell was seen. The red corpuscles showed but little alteration. On the one occasion (September 7th) when the hæmoglobin was tested with Sahli's modification of Gower's instrument, it worked out at about 65 per cent., with a red count of somewhere about 3,000,000. The specific gravity (Roy-Hammerschlag) on that occasion was 1.047. Nucleated forms were, considering the anæmia, surprisingly scarce. Megaloblasts were absent altogether, and normoblasts were very uncommon. A few, with much fragmented nucleus, were. however, detected. Granular degeneration and polychromatophilia were not observed. Glycogen was not present to a very marked extent at any time. It was seen only in the polynuclears, and never in the lymphocytes. The urine showed no marked abnormality save the presence of amorphous urates in large amount. Crystals of uric acid were not seen. There was no albumen. The total nitrogen, estimated on one occasion by my pupil, Dr. Farnan (Student in Pathology of the Royal University), was found to be 1.428 per cent., by Kjeldahl.

Progress of the Case.—On September 25th the patient, who had been allowed to walk in the garden, developed lobar pneumonia of markedly asthenic type, his temperature rose to 103°. On the 27th the respirations were gasping and hurried, pulse 128 with a tendency to intermit, face and lips pale. The breathing was much embarrassed by the abundant muco-purulent exudate, which he was unable to expectorate. He died on the following day.

His blood was examined about 36 hours *ante mortem*, when, as will be seen from the table, there was not only no diminution of the total leucocytes, such as usually occurs when pneumonia or other infective process supervenes on leukæmia, but they were actually increased in number. Of the polynuclear leucocytosis so characteristic of pneumonia, there was no trace in the peripheral blood. This, of course, means absence of reaction against the infective agency, and accounts for the rapid collapse of the patient, who may be said to have sunk without a struggle, being deprived of his normal defensive mechanism—the polynuclear leucocytes. The vast majority of the few he did possess were found at the autopsy, as might be expected, in the blood and exudate of the lung. Another point noted in the differential blood-count made on that day was the obviously degenerate condition of the nucleus of many of the lymphocytes and large mononuclears. It was often incurved, reniform or bilobed, or else it presented a highly stained or unstained belt dividing it in two, as though it had just undergone direct division. It was often vacuolated, and a darkly stained granule, resembling a nucleolus sometimes appeared in the centre of a large vacuole. The nodal points of the nuclear reticulum seemed also unduly prominent. The protoplasm of many of the smaller lymphocytes was reduced to a hardly visible ring. Many of the polynuclears were unusually large, with completely fragmented nucleus and protoplasmic granulations tending to be basophilic in their colour reaction to the Jenner stain.

AUTOPSY.

This was done within 12 hours after death, and was complete, with the exception of the nervous system. Only the points of importance are here given. All the lymphatic gland groups were enlarged: those in the neck, axillæ and groins moderately so (pea to cherry size); those in the mediastina, retro-peritoneal tissue, portal and cœliac regions were larger—up to a hen's egg. The bronchial glands were three times as big as normal, slate-

TABLE OF BLOOD-COUNTS IN A CASE OF CHRONIC LYMPHÆMIA.

Date Sept., 1904	Dilution used in making count	Reds, in thousands	Whites, in thousands	Relation of whites to reds	No. of Leucocytes examined in making differential count	Polymorphs, per cent.	Large mono-nuclears, per cent.	Lymphocytes, per cent.	Total mono-nuclears, per cent.	Relation of mono- to poly-nuclears	OBSERVATIONS
3	1:100	3,908	163	1:24	—	—	—	—	—	—	Blood, pale, watery—coagulated slowly.
5	1:10	—	154	—	200	4	15	81	96	24:1	
10	1:100	2,848	206	1:14	307	7.8	2.3	89.5	91.8	12½:1	Differential count made on a Jenner prep.
15	—	—	—	—	303	5.3	—	—	94.7	18:1	Toluydene-blue prep. Mononuclears not sub-divided.
20	1:10	—	167.2	—	—	—	—	—	—	—	—
27	1:100	3,048	332	1:9	477	6.2	—	—	92.4	15:1	Hæmatox-eosin prep.—a few (1.6 per cent.) very large mononuclears seen; but, generally speaking, it was impossible to distinguish large from small mononuclears.
29	—	—	—	—	175	20.5	—	—	75.5	3.7:1	Film of lungblood taken *post mortem* and stained with Jenner. It contained 0.5 per cent. of eosinophils, and 3.5 per cent. of myelocytes.

grey in the middle, pinkish and pulpy towards the periphery of the cut surface; they were highly vascular. The capsule of all the glands seemed intact, and the glands, though swollen and soft, could not be said to be confluent; their intense vascularity was a marked feature. The largest masses were as usual found along the course of the aorta in the posterior mediastinum, and from the cœliac axis to the bifurcation.

The *lungs* showed red hepatisation of the whole left lower lobe, and of the lower fourth of the right upper, and upper two-thirds of the right middle lobe. They were elsewhere œdematous, and presented obsolete tubercle in both apices. The left pleura was nearly full of fluid; none in the right.

Heart.—Beyond some irregular raised white plaques on the surface of the right auricle, this showed no abnormality. There was slight mottling of the myocardium, but no pronounced condition of fatty degeneration.

Spleen.—This weighed 51 ozs. It was adherent to the diaphragm and omentum. Without and within it presented an appearance that might perhaps be most fittingly described as "marbled"—studded over with small irregular grey and red areas, with here and there a larger bright-yellow cheesy area of necrosis, surrounded by a vivid red zone of hæmorrhage. Its consistency was decidedly firmer than normal. Neither follicles nor trabeculæ were visible on the cut surface. In the hilum were several enlarged glands as big as a horse-bean.

The *liver* weighed no less than 83 ozs. It was soft and pale, with slight "nutmeg" discoloration. Though extensively altered, as will be seen lower down, it presented no marked change to the naked eye.

The *kidneys* were about normal in size, and studded over with small yellowish-white patches, which proved to be leukæmic infiltrations. These were mostly superficial, not penetrating more than about 2 mm. beneath the capsule.

The *mesenteric glands* were all moderately enlarged. The lymphoid structures in the small and large intestine were enlarged, and projected about 1 mm. above the surface of the mucous membrane. They were greyish-pink in hue and not ulcerated.

Marrow.—That of the left femur and left humerus was examined, 6-inch lengths of each bone being removed. It was found to be yellow, fatty, non-vascular, and quite normal, both macro- and micro-scopically.

The *manubrium sterni* was bisected, squeezed in a vice, and films made from the pinkish marrow-like fluid that exuded. They will be described lower down.

HISTOLOGICAL EXAMINATION.

This was done by mean of films and sections. The former were all air-dried and fixed in alcohol and ether, equal parts. The tissues were fixed in triplicate :—(*a*) In 10 per cent. formalin ; (*b*) in saturated sublimate ; (*c*) in Flemming's solution.

1. *Bone-marrow.*—(*a*) Of the Long Bones.—After removal of the fat by immersion in alcohol and ether only a few red discs and lymphoid cells were left. Neither eosinophiles, nor myelocytes, nor nucleated red cells were discoverable. The normal fatty character of the marrow had evidently persisted. (*b*) Of the Sternum.—This was seen to be of lymphoid character, most of the cells being small, non-granular, mono-nuclear elements with a narrow rim of protoplasm, mostly more basophilic than the n· cleus. There were also much larger cells with a single faintly stained nucleus which often nearly filled the cell. Their protoplasm was either (1) hyaline or (2) studded with extremely fine basophilic or neutrophilic granules (myelocytes). A few eosinophiles, both poly- and mono-nuclear were also seen. Polynuclear neutrophiles of the ordinary kind were almost absent. There were many nucleated red cells, all of normoblastic character, and possessing either a single or a fragmented nucleus.

2. *Pleural Exudate.*—By means of the centrifuge, an abundant deposit of leucocytes was readily obtained. These were mostly lymphocytes, the polymorphs being relatively few and degenerate, their granules being scanty and often basophilic in affinity. There were also many large mononuclear cells with non-granular protoplasm so basophilic as to be hardly distinguishable from the nucleus. These cells were often much vacuolated. They were probably desquamated endothelia. Pneumococci were present in small number outside of the cells.

3. *Lymph-glands.*—The films showed only lymphoid cells of moderate size, with a large nucleus and a narrow fringe of basophilic protoplasm. Mitoses were not seen, nor was there any difference between films taken from different glands. In material fixed whilst still warm with Flemming, paraffined, and cut in ribbons, not exceeding 5 mikra in thickness, mitoses were readily found, especially in safranin preparations. In some sections they were

quite numerous, several in each high-power field. The lymph-channels were filled with structureless coagulum, containing many lymphoid cells, some of which lay near the outer wall, and seemed as though wandering into or out of the sinus. The distinction between endothelioid germ-centres and ordinary small-cell lymphoid tissue was obliterated. The lymphoid tissue in some of the glands was divided up into follicles by trabeculæ coming in from the capsule, and many of these follicles contained large thin-walled vessels. Giant and eosinophile cells were not seen in the glands.

4. *Spleen.*—Films made at the autopsy presented mainly two sorts of cells—viz., ordinary red corpuscles and lymphocytes—mostly small, many being reduced to a nucleus with a barely discernible ring of protoplasm. Occasionally there occurred much larger, more faintly-staining elements, with a large faint nucleus, nearly filling the cell; the protoplasm was charged with exceedingly fine acidophil granules. These cells would therefore appear to be of myelocytic nature. Their significance in the spleen is doubtful in a case of lymphatic leukæmia. They were often vacuolated. A single large mononuclear with eosinophil granules was also found. The presence of these two last-mentioned varieties of cell suggests the question: Could there have been a myeloid transformation going on in the spleen? One would hardly expect it to occur in lymphatic leukæmia unless, indeed, the bone-marrow had undergone such an amount of lymphoid transformation as to react by an overgrowth of its granule-cell-forming tissue and that this had then become generalised. None of the sections made from portions (four) cut from various parts of the spleen showed any myeloid cells. In this connection it is also to be noted that there were extremely few polynuclears in the spleen. Sections showed (*a*) reduction of the trabecular system, the cords being few and small. (*b*) Reduction of the follicles, very few being present, and these of small size. The general appearance of the sections was one of nearly equal distribution of the lymphoid cells, between which a fine reticulum of nucleated fibres, often reinforced by unstriped muscle, could readily be made out. Long lines and columns of large mononucleated cells, perhaps identical with Mall's lymph-cords, could be seen all over the sections, but a lobular division, as described by that writer, could certainly not be detected. (*c*) Presence of patches of necrosis corresponding to the opaque patches seen on the whole

specimen. The centre of these stained a diffuse violet with hæmatoxylin, and showed complete karyorrhexis. The periphery showed evident signs of re-organisation in the shape of many layers of fibroblasts and new thin-walled vessels filled with lymphocytes. Here and there was an extra-vascular polynuclear leucocyte, though the majority, even in these re-organising parts, were mononuclear. Outside of the fibroblastic area were effused red corpuscles, which became more and more numerous and distinct as one passes outwards, until finally they formed a bright purple-red ring, visible to the unassisted eye, round the necrosed patch. (*d*) Presence of brown amorphous pigment in granules, lumps and scales, especially at the periphery of necrotic parts and near the hæmorrhages. This pigment gave a typical iron-reaction with ammonium sulphide, and a less distinct one with ferrocyanide of potash and HCl. (*e*) Amongst the red corpuscles, so numerously present in the spleen-sections, nucleated forms were not seen. (*f*) On the reticulum, a large few mono-nucleated endothelial plates could be made out, but no giant cells. The general impression left by a study of the spleen sections was that of an enormous and uniform increase of lymphocytes, forcing apart the trabeculæ, obliterating the follicles, and producing a uniform microscopic picture, varied only by patches of hæmorrhage, necrosis, pigmentation, and fibroid transformation. Giant-cell formation so often encountered in cases of Hodgkin's disease was not found. In concluding this description of the spleen, I wish to lay special stress on the rarity of mitotic figures, even in thin paraffin sections of Flemming-fixed material stained with safranin, whereas they were readily demonstrated in sections of the lymphatics, similarly treated. Apart from the hæmorrhages there was very little necrosis.

5. *Liver*.—Despite the macroscopically unaltered appearance of this organ, the sections showed the most exquisite lymphocytic infiltration of the portal canals. The walls of the veins, and occasionally of the arteries, were infiltrated, and, indeed, replaced by the small-cell growth, in which the bile-ducts were immersed; the cells composing it were typical lymphocytes, with scanty protoplasm and darkly-stained nucleus, and they lay upon a distinct reticulum. They did not penetrate between the liver cells, which, save for the presence of golden-brown pigment, seemed quite normal. The pigment was amorphous, and did not give the iron reaction. It lay chiefly near the centre of the lobules.

In many of the liver cells there were also isolated granules of iron-containing pigment. Amongst the lymphoid cells, which so abundantly infiltrated the liver, it was very difficult to find any in a state of mitotic activity, yet we must suppose them to be actively proliferating.

6. *Kidneys.*—These were thickly studded with small patches of lymphoid infiltration, which for some reason were strictly confined to the sub-capsular region of the cortex, into which they penetrated in a wedge-like manner, like minute infarctions, for the distance of a millimetre or two. The lymphoid cells seemed to be insinuating themselves between the tubeules and forcing them apart. Degenerating tubules and glomeruli, quite immersed in lymphoid cells, could be seen here and there. Typical mitoses were again very difficult, almost impossible, to find amongst these closely crowded lymphoid cells, even on Flemming preparations stained with safranin and iron-hæmatoxylin.

7. *Suprarenals.*—These were normal, save for the presence of lymphoid infiltrations amongst the large cells of the medulla.

8. *Pancreas.*—A minute patch of lymphoid cells was found amongst the acini, and doubtless others would have been seen if sought for. The islands of Langerhans seemed unduly prominent and large.

9. *Lungs.*—In view of the rarity of polymorphs in the general circulation, the histological examination of the pneumonic lungs promised to be of great interest. The alveoli were found distended with coagulated fibrin, in which were entangled many red corpuscles and great numbers of polymorphs, apparently nearly all the patient had to dispose of. Many of them seemed degenerate, with completely fragmented nuclei. In every field there were small numbers of pneumococci. They were mostly extra-cellular. The contrast between the snake-like vessels crowded with lymphocytes and the alveoli packed with polynuclears, between which they coursed, was very curious.

This case must be looked upon as a typical one of chronic lymphæmia. In the course of events the only departure from normal was the absence of any polynuclear leucocytosis or diminution of the lymphocytosis as the result of pneumococcal infection. From the anatomical standpoint the chief departure from the conditions usually found in such cases was the state of the marrow of the long bones, which, instead of undergoing a lymphoid transformation, retained its normal fatty character. Possibly the lesion was unevenly distributed focal, and might have been detected had a more complete examination been made. Another point of interest is that whereas fresh blood-preparations always contained leucocytes crammed with large refractive granules, which might readily have been taken for eosinophiles, stained films showed practically no trace of this variety of cell.

I have to express my thanks to Dr. Martin Dempsey for permission to bring this case forward.

ART. VIII.—*The Principal Results of the Census of the United Kingdom in* 1901.[a] By R. E. MATHESON, LL.D., Barrister-at-Law, Registrar-General for Ireland.

(*Continued from page 114.*)

BIRTHPLACES.

A COMPARISON for the United Kingdom of the Birthplaces in 1901, with those returned in 1891, shows a considerable increase in the proportion of persons born outside the United Kingdom, the percentage, which was 1.1 in 1891, having risen to 1.4 in 1901. The proportion of persons born in British Colonies and India rose from 0.35 per cent. in 1891 to 0.39 in 1901, while those born in foreign countries, who were 0.70 per cent. in 1891, increased to 0.93 in 1901.

The proportion of persons enumerated on English forms as born in England and Wales, or in Scotland, shows but little change during the decade, but there was a notable decrease in the proportion of persons born in Ireland, which in 1891 was 1.58 per cent., whereas in 1901 it fell to 1.31.

There was a material increase in the proportion of persons born in the Colonies and in foreign countries.

The proportion of persons enumerated in 1901 on Scotch forms as born in Scotland, was 91.4 per cent. Those born in Ireland formed 4.6 per cent. of the total population of

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[a] Presidential Address read before the Statistical and Social Inquiry Society of Ireland, November 25, 1904.

Scotland, and English or Welsh-born people 3.0 per cent., while those born in the Colonies and Foreign Countries were only 1.0 per cent.

The Irish Statistics of Birthplaces show a continued increase in the number of persons born in Great Britain. The persons of English or Welsh birth amounted in 1891 to 74,523, while in 1901 they reached a total of 76,977 persons. The number of Scotch in Ireland, which was 27,323 in 1891, increased to 30,101 in 1901, or 10 per cent. more.

The number of persons returned on Irish Census forms in 1891, as born in foreign countries, was 12,900. In 1901 it rose to 16,541, an increase of 28.2 per cent., which is largely due to the number of persons born in America, which rose from 7,705 in 1891 to 10,120 in 1901, being an increase of 2,415, or 31.3 per cent., during the decennium. There was also a considerable increase in the number of persons born in Russia—mostly Russian Jews.

Nationality.

In close relation to the subject of Birthplaces is that of Nationality. In England and Wales and Scotland the information given in the Enumeration Forms enabled the Census Authorities to distinguish true aliens from British subjects born abroad, which was not the case in Ireland, but in this country, in many instances, as in the case of Russian Jews, the name, birthplace, and religious persuasion left no doubt as to the nationality to which the person belonged.

In England and Wales the aliens in 1901 numbered 247,758 persons as against 198,113 in 1891, being an increase of 25.1 per cent. between 1891 and 1901. The largest proportion of this increase was in Russian subjects.

In Scotland in 1901 the total number of foreigners enumerated was 17,654. In 1891 the number was 8,510.

INFIRMITIES.

I now pass to the consideration of the Statistics of persons suffering from infirmities—viz., the Blind, the Deaf and Dumb, and the Lunatic and Idiotic.

The Blind.

The total number of the Blind in the United Kingdom in 1901 was 32,823, as against 31,605 in 1891, showing an increase of 1,218, but the proportion per 10,000 of the population decreased from 8.38 in 1891 to 7.92 in 1901.

In England and Wales the number of Blind increased from 23,467 to 25,317, but the proportion per 10,000 decreased during the decennium from 8.09 to 7.78.

The number of Blind in Scotland in 1901 was 3,253, while in 1891 it was only 2,797, showing a numerical increase of 456, and the proportion of blind persons per 10,000 of the population increased from 6.95 in 1891 to 7.27 in 1901.

In Ireland there was a great fall in the number of Blind during the decennium. The number of blind returned in 1891 was 5,341, and in 1901 4,253, showing a decrease of 1,088, and the proportionate number of blind per 10,000 of the population, which in 1891 was 11.35, fell to 9.54.

It will be seen from the above that as regards the proportion of blind persons in 1901, per 10,000 of the population, Ireland stood highest, England next, and Scotland lowest, and this is also the case as regards each sex.

In all three countries in 1901 blindness was more frequent amongst males than amongst females. In England and Wales the blind males were in the proportion of 8.35 per 10,000 of the male population, and the blind females only 7.25 in every 10,000 females. In Scotland, the proportions were 7.66 males and 6.90 females, and in Ireland 9.70 males and 9.39 females.

Comparing the blind at the various age periods in the three countries, it appears that in each sex the proportion of blind, in the age periods under 25 years, is much lower in Ireland than in either England or Scotland; it is also lower in the age period 85 and upwards. The proportion of blind of each sex in Ireland is higher than in the sister countries in the age periods 45-75.

The Deaf and Dumb.

The number of the Deaf and Dumb in the United Kingdom in 1891 was 20,781, and in 1901, 21,855, showing an increase in numbers of 1,074, but the proportion of Deaf and Dumb persons per 10,000 of the population decreased from 5.51 to 5.27.

In England and Wales the number of these afflicted persons increased from 14,192 in 1891 to 15,246 in 1901, but the proportion per 10,000 fell from 4.89 to 4.69.

In Scotland there was also a numerical increase during the 10 years, the number being 2,638 in 1901, as compared with 2,125 in 1891, and the proportion of deaf and dumb per 10,000 of the population increased from 5.28 in 1891 to 5.90 in 1901.

In Ireland there was a decrease in 1901, both in the absolute number of the deaf and dumb and in their proportion to the population. The number of the deaf and dumb, which in 1891 was 4,464, fell to 3,971, and the proportion per 10,000 decreased from 9.49 to 8.91.

It will be seen from the above that as regards the proportion of deaf and dumb persons per 10,000 of the population in 1901, Ireland stood highest, Scotland next, and England and Wales lowest, and this also applies to each sex.

In each of the three countries in 1901, deaf mutism was more prevalent among males than females, the proportion per 10,000 being—Ireland, males 10.00, females 7.84; Scotland, males 6.49, females 5.34; and England and Wales, males 5.24, females 4.17.

The Insane.

I now come to the third class of Infirmities—Lunacy and Idiocy—a subject which is engaging much public attention at present owing to the startling increase in the number of persons so afflicted.

There were in the United Kingdom in 1901, 177,995 persons returned as insane, as against 134,033 enumerated in 1891.

The following Table shows the number of mentally deranged in each Division of the United Kingdom at the Censuses of 1871, 1881, 1891, and 1901.

TABLE *showing the Number of the Insane in Ireland, England, and Scotland, respectively, at the Censuses of* 1871, 1881, 1891, and 1901.

CENSUS YEARS	IRELAND	ENGLAND	SCOTLAND	CENSUS YEARS
1871	16,505	69,019	11,413	1871
1881	18,413	84,503	14,397	1881
1891	21,188	97,383	15,462	1891
1901	25,050	132,654	20,291	1901

From this Table it will be seen that the number of the Insane has been increasing in Ireland, England and Scotland respectively at the date of each decennial Census since 1871. There appears, however, to be some doubt as to comparability of the English and Scotch figures for 1901 with those for previous years, owing to the substitution at the last enumeration on the Occupier's schedule of the words "Feeble-minded" for "Idiot."

The following Table shows the proportion per 10,000 of the population of the Insane in each of the three Countries:—

TABLE *showing the proportion per* 10,000 *of the Population enumerated as Insane in Ireland, England, and Scotland, at the Censuses of* 1871, 1881, 1891, and 1901, *respectively.*

CENSUS YEARS	IRELAND	ENGLAND	SCOTLAND	CENSUS YEARS
1871	30.49	30.39	33.97	1871
1881	35.58	32.53	38.54	1881
1891	45.04	33.58	38.41	1891
1901	56.18	40.78	45.37	1901

From the above Table it will be seen that in England and Wales the proportion of the Insane per 10,000 of the population increased from 30.39 in 1871 to 40.78 in 1901, that in Scotland the proportion per 10,000 increased from 33.97 in 1871 to 45.37 in 1901, and that in Ireland the proportion of the mentally deranged per 10,000 of the population rose from 30.49 in 1871 to 56.18 in 1901.

From this diagram and the foregoing remarks it will be observed that Ireland occupies the unhappy position of having by far the highest proportion of Insane in its population, Scotland coming next, while England and Wales stand third on the list.

An investigation into the numbers of each sex shows that insanity was more prevalent in 1901 amongst females than males in England and Wales, and in Scotland, the proportion per 10,000 being—England and Wales, females 42.02, males 39.46; Scotland, females 46.02, males 44.69. For Ireland, however, the contrary was the case; the proportions being—males 59.81, females 52.64 per 10,000.

LANGUAGE.

The inquiry into language in England and Wales shows that in Wales and Monmouthshire in 1901, 49.8 per cent. of the population, aged 3 years and upwards, spoke English only, 15.1 per cent. spoke Welsh only, and 34.8 per cent. spoke both English and Welsh, 0.2 per cent. spoke other languages, and as regards the remainder, 0.1 per cent., there was no statement.

In Scotland 28,106 persons, or 0.63 per cent. of the total population, spoke Gaelic only, while 202,700 persons, or 4.53 per cent., spoke both Gaelic and English.

The number of persons in Ireland who spoke Irish only, which in 1891 was 38,192, or 0.81 per cent. of the population, decreased in 1901 to 20,953, or 0.47 per cent. The number of persons who spoke both Irish and English, which in 1891 was 642,053, or 13.6 per cent., was in 1901 620,189, or 13.9 per cent. of the population.

It is worthy of note that while the returns for 1901 show a decrease in the number of persons speaking English and Irish in the provinces of Munster and Connaught, the number of such persons increased in 1901 in the provinces of Leinster and Ulster, a result, as regards these two provinces, due no doubt to the movement for the revival of the Irish language.

II.—SUBJECTS OF INQUIRY PECULIAR TO IRELAND.

I shall now refer to the subjects of inquiry peculiar to this country.

THE SICK.

Statistics of the temporarily sick have formed part of the Irish Census Inquiries since 1851, and tables showing the sick on Census night are included in the Irish Commissioners' Report for 1901. The diseases are classified under Zymotic (or Infectious) Diseases, Constitutional Diseases, Developmental Diseases, and Local Diseases, and there are columns for Injuries and "All Others." Our time would not admit of my examining these Tables in detail, but I shall refer to three of the principal diseases dealt with in the Report.

We find there were 2,900 cases of persons suffering from Influenza on Census night. This disease has come into painful prominence during the decade, and the deaths from it in 1900 reached the large proportion of 10.5 per 10,000 living.

The number of persons returned as afflicted with Phthisis or Pulmonary Consumption, on Census night, was 1,967. That this number is far below the real number of persons labouring under the disease is evident from the fact that during the year 1901, 9,549 deaths from Phthisis were registered in Ireland; and it may, I think, be assumed that no cases were returned on the Census Forms except those in which the patients were confined to their rooms and incapacitated from attending to their ordinary avocations. The prevalence of this and other forms of tuberculosis in Ireland is a matter which cannot be too frequently brought under the notice of the public.

The third disease to which I shall refer is Cancer. On Census night in 1901, 439 cases of persons suffering from that disease were returned, a figure which must be considerably under the true number, as 2,893 deaths from Cancer were registered in the year 1901. The observations

I have just made with reference to the class of Phthisis patients included in the Census returns apply also to the Cancer cases. I have endeavoured to call attention to this disease in a special report recently issued on the subject, which has been widely circulated.

AGRICULTURAL HOLDINGS.

The Census of Agricultural Holdings according to rateable valuation, population, houses, out-offices, and farmsteadings thereon, first taken in 1881, was continued in 1891 and 1901.

The tables constructed from the information obtained through this Inquiry contain valuable and interesting particulars regarding the Agricultural Population and the holdings on which they reside.

The holdings, when classified according to the amount of rateable valuation, show for holdings not exceeding £4 in value a considerable increase, the number of such holdings in 1891 being 127,098, and in 1901 134,182. The holdings above £4, and not exceeding £10 in value, show a decrease, the number being in 1891, 144,592, and in 1901, 141,162. The variations between 1891 and 1901 in the several classes of holdings above £10 in value were inconsiderable.

RELIGIOUS PROFESSIONS.

Ireland is the only part of the United Kingdom where Religion forms one of the subjects of inquiry at the Decennial Census.

In 1901, the number of Roman Catholics in Ireland was 3,308,661, while in 1891 they numbered 3,547,307, being a decrease in 1901 of 238,646 persons. Roman Catholics represented in 1901, 74.21 per cent. of the population, while in 1891 the percentage was 75.40—showing in 1901 a decrease of 1.19 in the percentage of the population who were members of the Roman Catholic Church.

Protestant Episcopalians (practically "The Church of Ireland") in 1901 presented a total of 581,089 persons. In 1891 the number was 600,103, being a decrease in 1901 of 19,014. The percentage, however, of Protestant

Episcopalians to the population rose from 12.75 in 1891 to 13.03 in 1901—an increase of 0.28.

There were 443,276 Presbyterians in 1901. In 1891 they numbered 444,974, thus showing a decrease in 1901 of 1,698. The percentage of Presbyterians in the population showed an increase, being 9.94 in 1901, as against 9.46 in 1891.

Methodists in 1901 showed an increase of 6,506, the number for that year being 62,006 compared with 55,500 in 1891. The percentage of the population of members of that religious persuasion also increased from 1.18 in 1891 to 1.39 in 1901.

Persons included under "All Other Denominations" rose from 56,866 in 1891 to 63,743 in 1901, being an actual increase of 6,877, while the percentage to the population in 1901 was 1.43, as against 1.21 in 1891.

Roman Catholics form the great majority of the inhabitants of the Provinces of Leinster, Munster, and Connaught, the percentage to the population in 1901 being—Leinster, 85.2; Munster, 93.6; and Connaught, 95.8. In Ulster the percentage of Roman Catholics in 1901 was 44.2, but in that Province they largely exceed in number the members of any other single denomination.

EDUCATION.

Illiteracy.

The Educational Statistics collected at the last Census in Ireland show a marked decline in illiteracy as compared with the preceding Enumeration, the proportion of persons aged 5 years and upwards who could both read and write having risen from 71 per cent. in 1891 to 79 per cent. in 1901. The percentage of those who could read only in 1891 was 11, whereas in 1901 it was only 7, and the persons returned as unable to read, who in 1891 were 18 per cent. of the population 5 years old and upwards, fell to 14 per cent.

This satisfactory state of things appears in all the four provinces. In Leinster the percentage of the illiterate fell from 15 in 1891 to 11 in 1901, in Munster from 20 to

14, in Ulster from 15 to 12, and in Connaught from 27 to 21 per cent. of the population 5 years old and upwards.

In Leinster the proportion of the population 5 years old and upwards who could read only, in 1901, was 6 per cent., as against 10 in 1891; in Munster 5 as against 8; in Ulster 9 as compared with 14; in Connaught 7 as compared with 11 in 1891.

The persons in Leinster, in 1901, who could read and write were 83 per cent. of the population 5 years old and upwards, the percentage in 1891 being only 75; in Munster in 1901 the percentage was 81 as against 72 in 1891; in Ulster it was 79 in 1901 as compared with 71 at the preceding Census, and in Connaught the percentage of the persons who could read and write rose from 62 in 1891 to 72 in 1901.

An analysis of the Statistics for each of the principal Religious Bodies shows that the decline in illiteracy to which I have referred was not confined to any particular religious denomination, all having contributed to the satisfactory results which I have noted.

SCHOOLS AND COLLEGES.

Schools and Colleges may be dealt with under three heads—viz., Primary Schools, Superior (or Intermediate) Schools, and Colleges of Universities and other Colleges.

Primary Schools.

The total number of pupils attending Primary Schools in the selected week (ending 11th May) in 1901 was 636,777, while in the selected week (ending 30th May) in 1891 the number was 685,074.

The male pupils who in 1891 were 342,918 decreased to 315,513 in 1901. The female pupils, who numbered 342,156 in 1891, declined to 321,264.

The number of Roman Catholic pupils in Primary Schools was 522,793 in 1891 and 471,910 in 1901; Protestant Episcopalian pupils numbered 81,360 in 1891 and 80,300 in 1901; the Presbyterian scholars were 69,545 in the former year and 70,876 in the latter; the number of Methodist pupils was 6,876 in 1891 and 7,899 in 1901;

and pupils of "All Other Denominations" numbered 4,500 in 1891 and 5,792 in 1901.

The total number of Primary Schools in 1901 was 9,157, as compared with 9,177 in 1891; but it is to be borne in mind in considering the reduced number of Primary Schools and the decline in the total number of pupils attending them in 1901 that many Schools, especially those of the Christian Brothers, formerly returned as Primary, were in 1901, owing to the influence of the Intermediate System in promoting the study of languages, returned as "Superior," and have thus gone to swell the number of Schools and Scholars in that group. It should also be remembered that, as I have already indicated, there was, during the decade, a very large decrease in the number of children of the school-going age in Ireland—a decrease, in fact, relatively much greater than the decline in the population at large.

Superior Schools.

The Superior Schools in 1901 numbered 490, with 35,306 pupils and students, against 472 of such establishments, with an attendance of 24,208, in 1891. These figures show a very satisfactory increase. The male pupils rose from 13,850 in 1891 to 22,978 in 1901, and the number of the females increased during the decade from 10,358 to 12,328.

The Roman Catholic Scholars in Superior Schools rose from 13,709 in 1891 to 23,897 in 1901, the Protestant Episcopalians from 6,234 to 6,433, the Presbyterians from 2,737 to 3,187, the Methodists from 701 to 923, and pupils of all other denominations from 827 to 866.

Colleges of Universities and other Colleges.

The third group of Educational Establishments consists of Colleges of Universities and other Colleges. There were 20 of such institutions in 1901 as against 18 in 1891.

The total number of Students in 1901 was 3,259, as compared with 3,561 in 1891—or a total decrease of 302 in 1901. Analysing the numbers according to Religious Professions, it appears that the Roman Catholic Students increased from 1,721 in 1891 to 1,750 in 1901, that the Protestant Episcopalians decreased from 1,046 in 1891 to 902 in 1901, that the Presbyterians decreased from 605 in 1891 to 451 in 1901, that the number of Methodist Students was almost the same, the number in 1891 being 86, while at the last Census it was 88, and that the number of students of all other denominations, which was 103 in 1891, fell to 68 at the last Enumeration.

It may be here mentioned that the Scotch Census Reports contain tables showing the number of persons at each year of age under 20 receiving instruction. These particulars were derived from the Householders' Schedules, and they are the only Statistics relating to Education given in the Reports for Scotland.

III.—SUBJECTS TREATED OF IN THE CENSUS REPORTS REGARDING WHICH THE INFORMATION WAS OBTAINED FROM OTHER GOVERNMENT DEPARTMENTS.

The subjects treated of in the Census Reports regarding which the information was obtained from other Government Departments include Area, Agricultural Statistics, Valuation, and Emigration.

AREA.

The information regarding area published in the Census Reports was supplied by the Ordnance Survey Department.

The total area of England and Wales in 1901 was 37,327,479 statute acres, exclusive of tidal water or foreshore, but including inland water. The area of Scotland was 19,459,155 acres, and that of Ireland 20,710,593 acres.

AGRICULTURAL STATISTICS.

Agricultural Statistics have formed part of the information contained in the Irish Census Volumes since 1841. They were for many years compiled in the Office of the Registrar-General, but were transferred to the Department of Agriculture and Technical Instruction on 1st April, 1900.

The main facts shown by a comparison of the Agricultural Returns for Ireland for 1901 with those for 1891, as given in the Census Reports, are that the land under Cereal or Corn Crops, and Green Crops, has decreased from 2,684,187 statute acres in 1891 to 2,397,017 statute acres in 1901; that the land for hay has increased, the acreage in 1891 being 2,059,529, and in 1901, 2,178,592; and that the area under grass for pasture has increased from 10,298,654 acres in 1891 to 10,577,238 in 1901.

An examination of the Agricultural Returns of Great Britain for 1891 and 1901, published by the Board of Agriculture, shows that in England and Wales the area under Cereal or Corn Crops, and Green Crops, has decreased from 9,284,766 statute acres in 1891 to 8,397,796 statute acres in 1901; that the land for hay has increased during the decade from 6,112,536 in 1891 to 6,150,638 in 1901; and that land under grass for pasture has also increased from 12,071,778 acres in 1891 to 12,511,313 in 1901.

In Scotland, the extent of land under Cereal or Corn Crops, and Green Crops, which in 1891 was 1,937,626 acres, decreased in 1901 to 1,865,142 acres; the land for hay increased from 520,696 acres in 1891 to 556,236 acres in 1901; and the number of acres under grass for pasture rose from 2,445,422 in 1891 to 2,465,449 in 1901.

VALUATION.

The information as to rateable valuation, which enters largely into the Irish Census Tables, was obtained from the Commissioner of Valuation in Ireland. The rateable valuation of Ireland, which in the year 1891 was £14,034,681, rose to £14,932,754 in 1901.

EMIGRATION.

The particulars as to Emigration which appear in the English and Scotch Census Reports were obtained from the Emigration Returns published by the Board of Trade. From these it appears that the number of persons of English origin who emigrated from the United Kingdom to places outside Europe during the intercensual period

1891-1901 was 1,109,556, the number of persons of Scotch origin 187,905, and of Irish origin 465,273.

The information as to Emigrants in the Irish Census Reports is derived from the Emigration Returns published by the Registrar-General. From these Returns it appears that 430,993 Emigrants (natives of Ireland) *left Irish ports* during the intercensual period 1891-1901.

As we have seen when considering the subject of the ages of the people in Ireland, the continued tide of Emigration has seriously disturbed the age-composition of the population of Ireland, as compared with that of England and Scotland.

CONCLUSION.

I desire to return my warmest thanks to the Honorary Treasurer of the Society, Mr. Peter J. O'Neill, for the very kind assistance he has rendered to me in connection with this address, and, in closing this review of the Principal Results of the Census of the United Kingdom in 1901, may I be permitted to express the hope that when the Census of 1911 is taken, it will be found that the remedial measures adopted by His Majesty's Government have borne fruit, and that a material improvement has taken place in the condition of Ireland.

ART. IX.—*Notes on Chinese Medicines.*[a] By the REV. SAMUEL SYNGE, M.D. Univ. Dubl.; Senior Medical Officer to Fuh-Ning-Fu Church Missionary Society's Hospital, Province of Fuh-Kien, China.

WHEN some months ago I purposed writing some notes on Chinese Medicines I was surprised to find notes on this very subject appearing in the *British Medical Journal* of April 23rd and 30th, 1904. I now purpose giving some further notes on the same subject. I shall endeavour not to repeat to any extent and not to criticise as good or bad what has already been published.

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[a] A Thesis read for the Degree of Doctor of Medicine in the University of Dublin, December, 1904.

I have on my table beside me a book on Materia Medica which I purchased when I was in Foochow. On the first page, which is yellow, we read that the book is the original volume by Wong Bieng-Ang (the author's name). Then comes the name of the book, which, translated, means "The Original Herbs and their Important Preparations." Then come the words "With the addition, when binding the book, of illustrations and explanatory notes." We are further informed on the same page the name of the shop where the book is sold in Foochow, and that this shop keeps the (printing) blocks.

We have on the following pages an index, and then further on many illustrations of various herbs, together with other things of, in some cases, a much more objectionable character. I have, as may be seen, marked in some cases some of the illustrations in English, such as liquorice, peppermint, gentian, rhubarb, nutmeg, castor oil, nux vomica, cinnamon, orange, and ginger. The cinnamon is given three illustrations, showing respectively its branch and leaves, its bush form, and its state with the bark removed. We also have some illustrations of the preparing of vinegar (which is the only form of "acetates" known to the Chinese), spirit, copper-sulphate, &c. Again, we have illustrations of various living animals, such as the pig, duck, common fowl, blackbone fowl, tiger, white horse, ass, and human child. The tiger is valued for its bones, which are thought to contain that which gives this animal its great strength. The white horse, the ass, and the child come into our list on account of the urine passed by them, which is used as a medicine at certain times. The first of the illustrations is that of one of the vegetable substances used medicinally. I have beside me on my table a piece of this plant which I purchased for a small sum in Foochow. Its name is Wong-gi. On the first page following the illustrations the uses of this drug are set forth, with its incompatibilities, &c. There we are told that it is *sweet* and *heating*, that *if used raw* it stimulates the outer part of the skin, causing perspiration in those who are not perspiring, and checking perspiration in those who are perspiring. Then the author quotes an older authority on the subject. Next he tells us that the drug makes the muscles beneath the skin firm and washes away the heating material. Further, that if the drug *is used roasted* it strengthens the body and relieves debility and heaviness, and causes warmth in the chest, stomach and bowels, and strengthens the spleen and stomach. Then comes a fanciful piece of explanation in small print. Further on we are told that it is good for dispelling an internal abscess; also that if rash of small-pox does not come out, and the patient's pulse is weak and his body feeling cold, then this drug is very useful. Then comes a long piece of explanation in small print. We are also told the meaning of the name "Wong-gi." The drug is the greatest of strengthening medicines; therefore its name is "gi." "Gi" means *greatest* or *old*. "Wong" means yellow. Then comes a description of the drug in good condition—namely, skin *yellow*, inside part *white*, and plant *very hard*. Next comes the remark that if mixing it with strengthening medicines you must first beat it out flat and heat it in honey. After some more notes and explanations we have some incompatibilities mentioned.

On further in the book we have an illustration of some sulphate of iron. I have some of this beside me which I purchased in Foochow. Some pages further on we have the following notes:—"It is a medicine that goes to liver and gall-bladder when taken internally; it is an astringent, causes vomiting, lessens amount of expectoration, and is good when liver is inflamed; also when throat is inflamed and distressed this substance mixed with vinegar and rubbed on is good, for it makes the phlegm pass away and the throat well; also it is good for cough, epilepsy, hæmaturia, and for worms in a tooth." Then we are told that it comes from the pits where copper is got, and is the fluid part of the copper, and that it can for this reason go to the liver and act on diseases of the liver. We are given a way to test its purity—that if rubbed on iron it can impart a copper colour to the iron, then we know that it is pure; also that the colour of the best is like the colour of the inside of the mouth of the green frog. We are then told that when bought in the streets it is generally mixed with vinegar, and not pure. Next follows a list of substances with which it is incompatible.

One of the last of the illustrations in the book is of the human placenta. In the notes farther on in the book we are told that the placenta is of a sweet and salt taste, and that it is of a stimulating nature. Also that it comes originally from the flesh and blood, and so can strongly stimulate the respiration and the blood, and can cure all kinds of weakness, thinness, and wasting disease that affect mankind. Then comes a piece of small print explanation on thinness, &c. And we are also told that the placenta is used for those who are weak in their minds, or who are mad, or who have epilepsy. Next comes the following directions:—"When choosing a placenta you must get one from a primipara of good health and that has no noxious poisons in her. Take placenta and wash thoroughly in a brook with running water until it is very clean, thus carrying away all dirtiness. Now either mix with spirit and boil, then toast till dry, then powder (as in a mortar): or else boil it till it is very soft and in shreds, then mix it with boiled rice, and eat." Now comes a long piece of explanation in small print. I have now given one example from the vegetable substances, one from the mineral substances, and one from the animal substances. There is no need to multiply examples, and the book is here for inspection. I have heard that the Emperor who collected and tasted the herbs mentioned in this book lived over five thousand years ago. Where the use of the mineral and animal substances mentioned came from I cannot say, neither can I say when they first came into use. All have been in use for a long time back, however.

Among the old midwives in the Fuh-Kien province there are, I understand, the usual absurd beliefs in things connected with their work. For instance, the belief that the placenta, if not duly delivered, will go up into the woman's chest and suffocate her; or the belief that after a child is born the milk often comes into the mother's breasts with the coming-in tide of the sea.

I may mention a form of fumigating that is used by the Chinese in the Province of Fuh-Kien. It is made of the remains of oil berries (after the oil has been pressed out of them for other uses) mixed with arsenious acid or some form of arsenical ore. This mixture is made up into long eel-like pieces, about eighteen inches in length, and covered with Chinese bamboo paper. One of these is placed on a tile, or other hard body, upon the floor of the department to be fumigated, and one end is lighted. It slowly smoulders, and lasts for about an hour or two. They are used for mosquitoes. The occupant of the bedroom shuts up the doors and windows of his room and then lights one of the eel-like bodies at one end. If no way of exit is left for the mosquitoes they are either killed by the fumes or at any rate rendered unable to bite the sleeper for some hours. This mode of keeping off mosquitoes cannot be very wholesome, and we foreigners seldom use it except under very special circumstances. On a warm and damp summer's evening last year, while sitting on a Chinese ferry-boat waiting for the full tide and for my mosquito curtains, which were behind me on the road, I was very glad to use the fumigation to turn the mosquitoes out of the cabin. I left the aperture by which I entered open (there was no door or window to close), so that air could get in. Then I had one of the eel-like bodies lighted in a corner farthest from the aperture. The fumes arose, and as they filled the little cabin I saw to my relief the mosquitoes sailing softly out of the aperture and away. It was my seventh summer in the Province of Fuh-Kien, but never before had I come across mosquitoes so ferocious as those that met me in the cabin of that old ferry-boat.

Another drug that has been largely used, or rather abused, in the Province of Fuh-Kien during the last half century is opium—a drug that we as a nation have been, and still are, forcing into China to the great harm of the people. It is used by the people to a certain extent as a medicine, but those who use it thus very frequently contract the opium habit. They can buy it without any of the restrictions that exist in this country. It is used also as a means of amusement, as they themselves say. These two uses cause a number of cases of chronic opium poisoning. A certain number of these chronic poisoning cases come to us to the hospital of Fuh-Ning to be cured of the bad habit, which even they as a people look upon as a vice. Only a very small proportion of the number who take it come to us for treatment, however. That the drug is harmful to the people of Fuh-Kien no one who has lived among them can doubt. I am safe in saying that opium smoking and opium pill swallowing make the rich man less rich and turn the ordinary working man into a poor man. Also opium undoubtedly injures health. Perhaps the point of all others is the constipation which it brings, with the anæmia and want of appetite which follow, together with a craving for more opium, which often becomes stronger than regard or affection for home, wife, or children. There is another point about opium that no one can doubt who has lived for any time in Fuh-Kien. It is the number of cases that you meet of men who have become a wreck of opium and phthisis combined. How many of these get phthisis as a result of and as a secondary thing to the abuse of opium, and how many, on the contrary, take to the opium because they have already got phthisis, I cannot say. In Fuh-Ning-Fu we are also every year called to a certain number of cases of acute opium poisoning. Those that we are called to in time we can nearly always save by emetics and stimulants, such as ammonia and coffee. We sometimes also use other things.

I have now given a few fragmentary notes on Chinese medicines and the Chinese methods of using them. We see that there is not much to learn from them, and that the Chinese are much in want of a better system than that which they now possess. There seems to be little doubt that at no very distant time the reform party will overturn many of the old-fashioned methods of China, and, among many changes, bring in a new and better method of medicine.

Art. X.—*Course and Treatment of a Case of Chorea Insaniens Associated with Pregnancy.*

By J. Francis Dixon, M.D. Univ. Dubl.; Senior Assist. Med. Officer, Three Counties Asylum, Hitchen, Herts.; late House Physician, Bethlem Royal Hospital, London; late R.M.O., Royal City of Dublin Hospital.

In submitting a communication on this subject I have been actuated principally by two motives—

1st. The comparative rarity of the condition.

2nd. The apparent want of uniformity of opinion as to whether or not such cases should be certified as insane, and treated as lunatics.

There are but 226 cases on record of chorea occurring in connection with pregnancy. How many of these were of the maniacal type I am unable to say, but probably only a very small proportion. Of these 226 cases, in 6 the chorea preceded pregnancy; in 105, it occurred during pregnancy; in 31, in recurrent pregnancies; and in 16 cases it developed *post partum*, while 45 cases terminated fatally.

In cases beginning during pregnancy, the greater number come on in the first three months; during the second three months there is a big drop, and for the last three months there are only 25 recorded cases. It is into this latter category that the case which I shall endeavour to describe later falls.

Now, as to the mental symptoms, in the great majority of cases of chorea they are but trifling. There may, however, be a complete change in the character, marked by irritability of temper, wilfulness, and emotional outbreaks. The powers of concentration and the memory are enfeebled. In rare cases the intellect becomes progressively impaired, and dementia ensues. Acute melancholia has been described. Hallucinations of sight and hearing may occur, and patients may behave in an irrational and meaningless manner. Maniacal delirium is occasionally associated with the very severe cases, and this constitutes *Chorea Insaniens* (Osler).

The motor symptoms in these cases are usually pronounced, but, according to Professor Osler, they have been overlooked and "*patients have even been sent to the asylum.*" This latter statement, by inference, leaves very little doubt on the mind but that Professor Osler does not recommend asylum treatment for such cases. In other words, that the mental disturbance does not constitute a condition severe enough, or sufficiently prolonged, to mean insanity.

It is notoriously a difficult matter to decide in some cases the very serious question as to whether a person should be certified as insane or not. One often sees mental conditions which, were it not for their presumed temporary nature, would, in themselves, constitute ample grounds for certification. Take, for example, the transitory effects of alcohol and other toxic agents, and of fevers. It is suggested (Pope on Lunacy, 2nd ed.) that insanity may be defined as "a defect of reason consisting either in its total, or partial absence, or in its perturbation." Who can gainsay that the reason of a drunken man is perturbed?—yet who would certify him as insane? Who would send a case of febrile delirium to an asylum? But

> "We are not ourselves
> When Nature, being oppressed, commands the mind
> To suffer with the body."

Delirium is a mental condition which, while it lasts, is essentially the same as that which constitutes insanity. The word, however, is used in a much more restricted sense than the word *insanity*, and signifies merely a temporary mental disturbance which is the result of certain physical causes. It must not be forgotten, however, that modern science seeks to find a physical basis for all forms of mental disturbance. Many people suffering from temporary insanity are enabled to escape the stigma attaching to the *legal* lunatic by reason of the financial resources at the disposal of their friends or relatives, who are enabled thereby to have them skilfully nursed and looked after while the attack lasts. Very different is the case with poor people, where neither the doctor nor the general hospital is willing to undertake the responsibility.

Let me now give you the course and treatment of a case where the latter conditions obtained:—

M. A. H. arrived at the County Asylum, Arlesey, on the 22nd October last. The certificate read as follows:—"The patient, M. A. H., who is suffering from chorea in a severe form, is in a highly emotional condition. She gives me graphic descriptions of visions which she has seen, whilst awake, of a haggard, tall old woman, who speaks to her. She tells me that she frequently hears the voices of absent friends in conversation downstairs.

"The patient believes, and states that her mother and her husband deliberately refuse admission to friends who call to see her, though she has heard the friends' voices. Such friends have never visited the house. She is extremely violent and abusive to her mother, whom she has struck more than once. She believes that she has heard conversations between her husband and his relatives in which she is accused of extravagance."

Here we have a record of hallucinations and delusions surely strong enough and definite enough to constitute insanity in the eyes of the law; but because they happen to be associated with the motor disturbances of acute chorea there are those who believe that such cases are only sent to an asylum owing to oversight or misapprehension.

On admission this patient was in a highly nervous and emotional state. She appeared now to realise for the first time that she had been brought to an asylum. She was greatly alarmed. She clutched me imploringly by the arm, and besought me that she might be kindly treated. The choreic movements of face, head, left arm and leg were most painful to see. On being reassured and put to bed, she quieted down considerably, and got a little sleep after a bromide and chloral draught. On visiting her next morning she appeared to be much more rational—the emotional weeping and incoherent excited talk had left her calm and resigned, and were it not for the motor disturbance one would have thought her quite well. I was now able to obtain the following history from her:—She had been a laundry maid in a public institution. In February last she had an attack of rheumatism, and while still only convalescing was married in March. She fell down stairs in September, but was apparently not much hurt. The choreic movements began about a week after this accident.

The ring-finger of the left hand was the first part affected, and from this they gradually extended to the arm, and eventually to the whole of the left side. She suffered a lot from loss of sleep, and felt queer and nervous, and more or less excited. She denied having heard voices or seen visions, but acknowledged having thought she saw the tracing of a woman's face on a lamp-glass, and that when she pointed it out to her friends they laughed at her, and that she then smashed the glass in order to get the idea out of her head. She had just recently lost a brother from phthisis, and not long previously had lost a sister from the same disease.

In appearance she is a bright and intelligent looking-young woman, aged twenty-two, healthy and well nourished, and in the eighth month of pregnancy. There is no tendency to anæmia. Her appetite is good. The only points made out on physical examination were a slight roughening of the first heart sound, exaggerated knee-jerks, and a marked pigmentation about the ankles and front of lower leg. This, by the way, could not have been due to arsenic, and looked not unlike that seen so often in women who sit much in front of the fire.

The treatment consisted of rest in bed, regulation of bowels, light nutritious diet, Fowler's solution, and a bromide and chloral draught at night.

For the first week the patient appeared to be doing very well—there was no aggravation of the motor disturbance, and the mental condition seemed almost normal. The question then arose whether it was justifiable to detain her. After some consultation it was decided that, owing to her advanced state of pregnancy, it might be a risky procedure to discharge her, as we did not know at what time she might again become maniacal or when premature labour might require to be induced. She was, therefore, confirmed as a lunatic on a somewhat weak mental report.

A few days after this decision was arrived at, she took to waking up about 1 o'clock in the morning, when she became very noisy and excited, and could not be kept in bed, saying she heard her husband calling outside the window, and insisting upon going to him. She now required the services of a special nurse, and hyoscin hypodermically (gr. $\frac{1}{75}$). On one occasion my colleague was called up and administered morphin, with the result that the patient became wildly excited, smashed the windows and furniture, and attacked and severely handled two nurses. Up to this time the choreic movements were well marked and troublesome. Finding that the bromide and chloral draught had begun to lose its effect, I administered sulphonal, gr. 40. She got excellent sleep, and from the first dose the choreic movements almost entirely ceased. Her mental condition, however, remained unsatisfactory. She had frequent crying fits, and, when asked her trouble, said she thought she was going to be done away with. She heard the nurses and patients passing defamatory remarks about her, accusing her of all sorts of wickedness. She was constantly holding conversations with people under the bed.

She continued to take nourishment well, and kept in good bodily health until labour began on the 25th of November. This proceeded quite normally, and she was delivered of a healthy male child on the morning of the 26th. The puerperium was uneventful. The child, as is the custom in asylums, was taken from the mother at once and fed artificially. She did not show the least interest in the child, but said she felt greatly relieved and better. The child was removed by the husband in a couple of days, but she did not want to see it, and said she could not realise it was hers. She, however, gradually began to improve mentally, and was allowed up on the tenth day.

It is interesting to note that the first letter she wrote to her husband, when convalescent, although perfectly rational, was much underlined. The second less so, and now her letters are quite normal. She can give me no reason for the underlining.

She is now quite convalescent, and is able to discuss intelligently her illness. She is bright, intelligent and industrious, and shows much appreciation and gratitude for the treatment received. She is in robust health. There is no residue of nervous twitching, nor paresis of any kind. She was discharged completely recovered on the 30th of January, 1905.

ART. XI.—*Sicily as a Winter Health Resort.* By E. PARLATO, M.D., Ph.D., Palermo.

A WINTER resort which in the last few years has been attracting a growing number of visitors to its shores is Sicily. There is no doubt that the many natural beauties of the island, the historical interest attaching to the monuments it contains, together with the mildness of its climate, are factors which will make it in the near future a still more popular point for a prolonged winter stay.

Thanks to their insular position, the people have retained many of the characteristics of the different races which have succeeded each other on the island, so that there is no lack of local colour.

The object of these lines is not to repeat what quite a number of books recently published on Sicily have said, but to lay before the profession some details drawn from the writer's personal experience and from the most recent official reports.

The climate of Palermo, Messina, Catania, and Taormina belongs to the warm sea-coast class: moderate degree of humidity, absence of fogs, small diurnal variations of temperature. Within the last five years the thermometer has, at Palermo, never actually reached the freezing-point—the lowest recorded temperature within this time having been 0.4° Centigrade = 32.7° F.

The great charm of the climate is certainly its mildness, which allows one to sit in a room by the open window on a great number of days throughout the winter. The following figures are taken from the report of the Royal Meteorological Observatory of Valverde, Palermo:—

Averages of Max. and Min. Temperature.

Year	Jan.		Feb.		March		Nov.		Dec.		
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	
	°	°	°	°	°	°	°	°	°	°	Centigrade
1900	16.5	7.4	18.4	7.8	16.9	6.0	21.4	10.5	17.6	7.9	
1901	14.6	4.4	15.6	5.2	19.9	7.9	20.0	10.0	18.5	8.7	
1902	15.9	5.6	17.9	7.9	18.1	7.5	20.2	9.8	16.8	7.2	
1903	16.6	5.8	16.2	5.1	18.2	6.8	19.7	9.5	17.1	7.9	
1904	14.8	6.1	17.1	8.0	17.9	7.5	—	—	—	—	
Average of 5 years	° 60.2	° 42.6	° 62.7	° 44.3	° 64.8	° 44.9	° 68.7	° 49.8	° 63.5	° 46.3	Fahrenheit

Rain is more prevalent during the winter months—the number of rainy days being more numerous in November and December. The average number of rainy days is 116 for Palermo and 86 for Catania.

The following table gives the relative moisture of the winter months at Palermo ; Saturation = 100 :—

YEAR	Jan.	Feb.	March	Nov.	Dec.
1900	% 71.7	% 68.8	% 69.3	% 74.8	% 78.7
1901	78.1	73.0	65.5	74.4	72.7
1902	78.7	73.2	72.3	78.5	77.3
1903	75.9	75.9	74.3	70.4	71.9
1904	79.4	63.3	67.4	—	—
Average of 5 years	% 76.7	% 70.8	% 69.7	% 74.5	% 75.1

The relative humidity at Catania and Taormina is slightly lower than at Palermo. This last has the advantage of a greater uniformity of temperature.

Winds.—The great superiority of Sicily over the Riviera in this respect is the absence of any cold winds, such as the Mistral or Bise. The north-east wind, the so-called "Greco," is very rare at Palermo, and lasts but a very short time. The much-dreaded Sirocco is rarely observed during the winter months, but is more prevalent in September and in April. It is really much less frequent than is generally supposed, and is more talked about than experienced. It lasts one, two, or, very rarely, three days, during which the temperature rises to a point which is disagreeably felt owing to the suddenness of the change. The writer's personal experience is that the Sirocco is most trying to people of full habit and plethoric constitution, whereas nervous, delicate individuals feel quite comfortable.

Talking of the winds, attention must be called to the dust of some of the streets of Palermo, which, during a high wind, becomes inconvenient and irritating. The municipal authorities have of late years been taking the dust problem in hand, and by paving and by watering of the streets have done much towards allaying this nuisance.

From the foregoing remarks the reader will be able to draw some conclusion as to the cases which will derive some benefit from a stay in the "Pearl of the Mediterranean."

Indications.—Convalescents from infectious diseases will find that the balmy and sunny atmosphere of Sicily renders possible and agreeable an outdoor life during the winter season, with all the advantages it brings to the general health.

Although for chest complaints (tuberculosis, pneumonia, and pleurisy residues, &c.) the writer is a partisan of the Alpine health resorts (Davos, Arosa, Leysin, &c.) the preference should be given to Palermo in those cases of tuberculous or other affections of the throat and chest, which are combined with a nervous temperament. The climatic influence will have a sedative action also in cases of bronchial asthma and irritability of the throat, although in cases accompanied by a copious catarrhal discharge (bronchorrhœa) a prolonged stay at Palermo is not to be recommended.

One class of invalids who will find Palermo very suitable as a winter resort is composed of the numerous sufferers from insomnia, neurasthenia, &c., caused by excessive irritability of the nervous system. Patients coming from the Riviera soon notice the change and the soothing effect of the Palermo climate on their sleep.

For cases of chlorosis and anæmia, combined with reduced vitality, a stay at Palermo or Taormina will be found very beneficial.

Sicily has an ideal climate for old people during the winter months, when in colder latitudes they would be obliged to remain indoors. Patients with compensated valvular trouble will find a winter spent in Sicily, free from the cold and fogs of the Northern climate, very pleasant and of benefit to the general health. The writer would also recommend a stay at Palermo or Taormina to the many Anglo-Indians who, for the first winter after leaving India, would find the climate of England too cold. Chronic rheumatic affections form a contra-indication to a stay in Palermo. In these cases Taormina would be more suitable.

SECOND FRENCH CONGRESS OF CLIMATOTHERAPY AND URBAN HYGIENE.

THIS Congress will be held at Arcachon (Gironde) from the 24th to the 28th of April, 1905. The President will be Professor Renaut (of Lyons). The Congress will close at Pau on the 29th of April. The Committee of Organisation sits at Arcachon. Doctor A. Festal, General Secretary, Villa David, will furnish any information he is asked for. Doctor Déchamp, General Treasurer, Villa Tibur, will receive subscriptions and correspondence relating to the same. The railway companies will grant members of the Congress a reduction of 50 per cent. available for Arcachon, Biarritz, and Pau, during the last fortnight of April. The wives and children of members travelling with them will benefit by the same reduction. Excursions will be made on the bay and in the forest of Arcachon, as well as to the Béarn and Basque countries. A copy of the subjects will be forwarded to each adherent ten days at least before the opening of the Congress, to enable all to prepare by careful study for the serious discussion concerning them. Fellow-members who desire to make communications are requested to send the title and a brief summary of their paper to the General Secretary before March 20th. A detailed programme of the work and excursions, also the rules and statutes, will be published shortly, and sent to all doctors who apply for them.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

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RECENT WORKS ON DISEASES OF CHILDREN.

1. *Lectures on Diseases of Children.* By ROBERT HUTCHISON, M.D., F.R.C.P.; Assistant Physician to the London Hospital and to the Hospital for Sick Children, Great Ormond-street. London: Edward Arnold. 1904. 52 Illustrations.
2. *Bacteriological and Clinical Studies of the Diarrhœal Diseases of Infancy with reference to the Bacillus Dysenteriæ (Shiga): from the Rockefeller Institute for Medical Research.* Edited by SIMON FLEXNER, M.D., and EMMETT HOLT, M.D. 1904.
3. *Reports of the Society for the Study of Disease in Children.* Vol. IV. Session 1903-1904. Edited by GEORGE CARPENTER, M.D. London: J. & A. Churchill.
4. *Transactions of the American Pediatric Society.* 15th Session. Edited by WALTER LESTER CARR, M.D. Reprinted from *Archives of Pediatrics.* 1904.
5. *The Physiological Feeding of Infants.* A Practical Handbook of Infant Feeding, and Key to the "Physiological Nursery Chart." By ERIC PRITCHARD, M.A., M.D. (Oxon.), M.R.C.P. (London). Second Edition. London: Henry Kimpton. 1904. Pp. 202.
6. *National Physical Education.*
7. *The Management of Lateral Curvature of the Spine, Stooping, and the Development of the Chest in Phthisis.* By E. NOBLE SMITH, F.R.C.S. Edin., &c.; Senior Surgeon to the City Orthopædic Hospital, London. London: Smith, Elder & Co. 1904. Pp. 133.
8. *The Care and Feeding of Children.* A Catechism for the Use of Mothers and Children's Nurses. By L.

Emmett Holt, M.D., LL.D.; Professor of Diseases of Children, Columbia University, &c. With an Introduction by Eric Pritchard, M.A., M.D. (Oxon.), M.R.C.P. Third Edition, revised and enlarged. London: Sidney Appleton. 1904. Pp. 149.

9. *The Nutrition of the Infant.* By Ralph Vincent, M.D., M.R.C.P.; Physician to the Infants' Hospital. Second Edition. London: Baillière, Tindall & Cox. 1904.

10. *Our Baby.* For Mothers and Nurses. By Mrs. Langton Hewer. Ninth Edition. Bristol: John Wright. 1904.

1. Dr. Hutchison's small volume contains much useful and interesting matter in a pleasant, colloquial form. It will be found a very valuable guide to many of the obscure clinical oddities found in children's diseases which ordinary medical text-books quite fail to grasp. The lectures were delivered at the London Hospital, and cover most of the field of practical medicine. The opening lecture alludes to the prevailing ignorance of students in this branch of medicine owing to its neglect in general hospitals and the fact that no systematic instruction is required before they present themselves for examination. The examination of children is well described. The chapter on feeding contains much useful material, but is only superficially handled; a useful analysis of various patent foods, however, forms a valuable paragraph. The chapter on digestive disorders is very clear, and dealing with disorders of the second dentition, the author foreshadows some doubt in his mind—as do many others—as to the identity of so-called mucous disease. The clinical condition is beyond question, but the pathological seat of the disease is not to our minds quite so decidedly simple. Interesting chapters follow on tuberculosis, rickets, and scurvy, while that on functional nervous disorders is especially so. In future editions we would like to see a fuller description of marasmus or atrophy and its treatment; but the faults of the volume are few,

and practitioners will reap many a useful hint from its perusal.

2. This monograph includes work done during the summers of 1902 and 1903, with some subsequent papers on the above subject.

At the beginning of the summer of 1903 the Rockefeller Institute for Medical Research undertook, under the direction of Simon Flexner, the bacteriological investigation of children affected with various forms of diarrhœa. The investigation was carried out directly with some twelve bacteriologists in the cities of New York, Philadelphia, Boston, and Baltimore. During the previous summer the Rockefeller Institute made a grant of money to Dr. Knox, of the Wilson Sanatorium for Children, for the purpose of promoting the bacteriological study of infants suffering from so-called "summer diarrhœa." This study was carried out by Duval and Bassett, who discovered in the dejecta and intestines of a high percentage of the children a bacillus agreeing in essential properties with *B. dysenteriæ,* Shiga. This bacillus was, moreover, found to undergo agglutination with the diluted blood-serum of sick infants, and to be unacted upon, in this respect, by the blood of healthy children or of children suffering from some other diseases. On the basis of the finding of the dysentery bacillus in more than forty sick children, of the total failure to obtain it in the stools of normal children, and of the serum reaction, they felt themselves justified in pronouncing the micro-organism the probable cause of the diarrhœa from which the children yielding it were suffering. The Rockefeller Institute secured the hearty co-operation of numerous hospitals from which the materials for study were drawn, and of several established laboratories in which the examinations were conducted. Simon Flexner, also, in the summer of 1903, tested on a number of these children suffering from infection with *Bacillus dysenteriæ* an anti-dysenteric serum prepared from the horse. Of these injections Freeman reports that his impression is that it had not a curative value. Hastings says his experience warrants no conclusions, except that it did no harm, while Warfield states that the serum was not curative, and seemed to cause great pain. These laboratory reports are all of first class standards, and the bacteriological and clinical supervision of Flexner and Holt is a further guarantee of their worth.

3. These interesting transactions are well printed, carefully edited, and attractively published. The matter contained in them consists of 97 communications, being medical and surgical combined. Many papers are of extreme value. Amongst those which are especially good are paragraphs on—Throat affections, idioglossia, three papers on congenital hypertrophic stenosis of the pylorus, tuberculous ulceration of the stomach, intra- and extra-cranial hæmorrhage in the new-born, sudden deaths from myocarditis. Two specially elaborate papers deserve to be mentioned—one by Mr. Stiles and Mr. Stuart McDonald on "Delayed Chloroform Poisoning," in which an exhaustive description is given of deaths occurring some hours after chloroform anæsthesia; and the second—which is the Wightman Lecture—by Mr. Clement Lucas on "The Hereditary Bias and Early Environment in their Relation to the Diseases and Defects of Children."

These transactions are well worth study, and form a well-indexed volume of reference on these diseases.

4. These volumes are always welcome, as the series contains some of the best work in diseases of children. They are the proceedings of a society for the study of disease in children, which meets annually in various American cities, somewhat after the manner of the British Medical Association, a different place being chosen each year (Washington, Boston, New York, &c., &c.). The society numbers under sixty members, but, notwithstanding this, splendid work has been accomplished, for they are mostly well-known authorities in this branch of medicine—Osler, Rotch, Starr, Stengel, Koplik, Holt, and Jacobi, amongst others. In the present volume some very able articles will be found on "Injuries and Infections of the New-born,"

by Hamill, Nicholson, and Snow; while Reynolds Wilson contributes a good paper on "Disturbances of Respiration in the New-born." Other chapters worth study are "The Discussion on Summer Diarrhœa," "Pneumonia," Still's "Chronic Polyarthritis in Children," and "Lumbar Puncture." This number is quite up to its fellows of former years.

5. CONSISTING of three main divisions, Dr. Pritchard's volume will, in one at least, be found useful and suggestive. The first part deals with infant feeding, the second with the development and physiology of infancy, and the last is an appendix of accessory foods and recipes. The portion of most value is the first, and especially in the domains of percentage feeding and the management of atrophy or marasmus will some useful tables and suggestions be found.

Dr. Pritchard is a strong advocate for percentage feeding, and provides most useful tables for the home-compounding of the milk prescriptions. These tables are admirably worked out, but are taken without question from the Walker-Gordon Laboratories as the required needs of infants of various ages. Laboratory or percentage feeding is perfect in theory, and often so in practice, but it frequently fails because many of the prescriptions require more cream than many people can procure. Nevertheless, in those cases where percentages are used, Dr. Pritchard's book will be really helpful. Many most valuable suggestions are offered for feeding marasmus cases, and we recommend a perusal of this chapter.

The portion on physiological development of infancy is so elementary and commonplace that no tyro in medicine need waste his time in reading it, but it will be a useful study for nurses and mothers.

We commend highly the print and publishing of the volume, and the better portions of the work will entirely warrant its purchase.

6. *National Physical Education* is the title of a new monthly penny paper devoted to the promotion of hygiene and physical training. It is one of the outcomes of the

petition to the Central Educational Authorities of the United Kingdom, which was signed by no fewer than 14,718 registered medical practitioners. An important deputation from the profession has also waited on the Board of Education upon this subject.

7. In his book Mr. Noble Smith describes in a clear and simple manner the practical points connected with the management of lateral curvature and stooping. He advocates exercises of various kinds, and describes them with precision. There has long been a prejudice against mechanical appliances, and for most excellent reasons, but Mr. Smith sanctions the use of one in particular, and shows that Chance's splint may be safely and with benefit made use of. In the care of these affections Mr. Smith speaks with high authority, and the book clearly expresses his views.

8. This is a manual for nurses in the catechism form of question and answer. When in 1889 the Practical Training School for Nurses was opened in connection with the Infants' Hospital in New York the need was found for a simple manual. The information is sound and practical, and much instruction is conveyed in the answers to the queries. We think, however, that Dr. Holt's suggestion of children's nurseries being kept at from 66° to 68° F. is seriously on the high side. Hot rooms in these countries are certainly mischievous and frequently produce delicacy in young children. In one of his next questions, however, Dr. Holt gives the well-known symptoms produced by over-heating. On the whole, the volume is eminently a useful one, and all nurses should possess a copy.

9. There seems to have been some demand for a second edition of Dr. Vincent's book, but it contains, in our opinion, a maximal amount of unnecessary padding and generalised truisms with a minimal quantity of original scientific work.

Much consideration is given to the Public Health standpoint of the bringing-up of children—all very good in its way—and tedious dissertations on the conditions of the mother, but one turns in vain to find any real crystals from scientific study of those obscure and obstinate diseases which so seriously affect the nutrition of the infant.

10. As much mischief is done by such hand-books as these, a short notice of one of the least injurious of them is warranted. Having reached a ninth edition, upwards of forty thousand have been issued, therefore this volume is widely read. On the whole, Mrs. Hewer has circulated wholesome advice, and the little book is more than usually free from hazardous recommendations. We are glad to find sensible remarks on clothing, especially regarding facility for respiration and movement. In the feeding directions there is an undoubted error in permitting so much starchy food for young infants: at three days old in a total of ten ounces prescribed over seven are of barley water, and this proportion is sanctioned as the child grows. In her excellent condemnation of starch later on, evidently culled from modern writers, Mrs. Hewer quite forgets that she is here giving a pure solution of starch which frequently has led to serious illness. Her temperatures for children's baths during illness are likewise too high. Taking these points into account we have probably noticed the main errors to be found, for the rest is really excellent advice for nurses in charge of children.

The Treatment of Syphilis. By F. J. LAMBKIN, Lieut.-Col. A.M.S.; Specialist at the Army Headquarters, India. London: Baillière, Tindall & Cox. 1905. Pp. 60.

THE preface to this little book is by Surg.-Gen. Sir Thomas Gallwey, A.M.S. It may, therefore, be regarded as published by Colonel Lambkin "*permissu superiorum,*" which invests it with no little importance from the point of view of the junior members of the Army Medical Service. We fully concur with the opinion expressed by General Gallwey in his preface that, in what has lately been written on the physical deterioration of the race in the

United Kingdom, the widespread and far-reaching effect of syphilis as a potent factor of degeneracy has not been brought sufficiently to notice or taken into serious account. The author adopts the doctrine now almost universally accepted—*i.e.*, that the virus of syphilis can be eradicated and an entire cure of the disease effected, and that mercury is the only remedial agent which can be relied upon to accomplish this end. He truly says—"The success or failure of the treatment by mercury depends altogether on the manner in which it is given; and there are two cardinal principles which must be observed to ensure success, viz.:—

1. That it be given in small doses uninterruptedly over a long period.

2. That salivation, or anything approaching it, is unnecessary, and must carefully be avoided.

These are sound principles which no one with any practical knowledge of the treatment of syphilis in the present day will question for a moment; but the various methods of administration by which the treatment of syphilis by mercury is to be carried out have each and all of them peculiar advantages under certain circumstances, which debar the possibility of laying down a dogmatic rule that any one of them is the best to be adopted indiscriminately in all cases. The three principal methods are:—

1. By the mouth.
2. Through the skin, which includes fumigation.
3. By the intramuscular method of injection.

The only other method—that of intravenous injection—deserves no comment beyond condemnation as dangerous and impracticable. Colonel Lambkin has had an exceptionally large experience in his official capacity in the Army Medical Service, and from this experience he has arrived at the conclusion that the administration of mercury by the mouth is open to such serious objections that he has long ago ceased to treat syphilis by giving mercury internally. The second method—that of introducing mercury through the skin (by inunctions)—he does not condemn; but in preference to it he strongly advocates the "intramuscular method," or the injection of one or other of several preparations of mercury by means of a hypodermic syringe into the muscular tissue there to be absorbed. This method he has found to be followed by such good results in his military experience that he almost advocates the abandonment of the other methods altogether, and the adoption of the intramuscular injection as a universal practice.

We do not question the splendid results which he has obtained by this method in his military practice, but we think he falls rather into the error of arguing from the particular to the universal in supposing that similar results can be obtained in the treatment of patients differently circumstanced from those with whom he has had to deal. His patients have for the most part been drawn from the ranks of the British army—strong, robust young men—in the treatment of whom he lays particular stress upon the importance as an adjunct to his treatment that they should have "hygienic surroundings, and, above all, life in the open air. The advantages of the latter cannot be too strongly stated. Those who can hunt, shoot, or engage in other out-door amusements should be encouraged to do so." We know that the intramuscular method was given a careful trial, under the strictest antiseptic precautions, in the Westmoreland Government Lock Hospital some years ago, the preparations used being the modification of Lang's cream, recommended at page 21 in his book by Colonel Lambkin, and also the solution of Hydrarg. sozoidal, prepared according to F. No. 3, given at page 18. Even when used with the greatest care in respect to surgical cleanliness and precision as to the injections being made intramuscular, the use of the cream was sooner or later found to produce abscess in almost every case, and the injection of the solution of Hydrarg. sozoidal caused so much local pain that the patients refused to submit to its continued use for the necessary period. For these reasons the methods were abandoned after a fair trial, and the method of treatment by inunction and fumigation reverted to as the best and safest for the treatment of the patients in the above institution. Having regard to the widely different hygienic surroundings of these patients from those treated by Colonel Lambkin the occurrence of abscess in the one and not in the other is easily explained. Compare the previous history of a healthy soldier, in healthy barracks or in camp, with that of an unfortunate woman, intemperate, ill-fed, and often badly clothed, and not coming under treatment at all until the disease is so far advanced as to have undermined her constitution. Take, in addition to this, the fact that the hospital building is unprovided with any open space where the patients can obtain a breath of fresh air or take any form of open-air exercise, and the predisposition to the occurrence of abscess among them is not hard to explain.

In conclusion, we must congratulate Colonel Lambkin upon having added to the not too numerous works on syphilis a little volume which is calculated to be of much farther-reaching utility than many of the more elaborate publications of recent years. The main principles of treatment laid down by him are so sound and concise that the perusal of his work by the junior members of the A.M.S. is sure to be productive of much benefit to them and the soldiers under their medical charge.

The Refraction and Motility of the Eye, for Students and Practitioners. By WILLIAM NORWOOD SUTER, M.D. Illustrated with 101 engravings in the text and 4 plates in colours and monochrome. London: Sidney Appleton. 1904. 8vo. Pp. 390.

AMERICA has been exceptionally active of late in many departments of medical literature, but in none to a greater degree than in treatises on the refraction of the eye and its causes and consequences. Dr. Suter, in addition, deals with disorders of motility, paralytic and non-paralytic.

The book is well and systematically arranged, and deals intelligently with its subjects, but it is not always very easy to follow, as its simplest statements are expressed in unusual terms, and though, no doubt, these are familiar enough to American ears, it requires some attention for an English ear to follow the intention of the author.

The book is divided into four parts—I. The Theory of Refraction; II. The Normal Eye; III. Errors of Refraction; IV. Disorders of Motility. Any student or practitioner who acquires the information contained in this book will be well equipped for his professional career as a refractionist.

Manual of Gynæcology. By D. Berry Hart, M.D., F.R.C.P.E., Lecturer on Midwifery and Gynæcology, School of the Royal Colleges, Edinburgh, Gynæcologist to the Royal Infirmary, Edinburgh, &c., &c.; and A. H. Freeland Barbour, M.A., M.D., F.R.C.P.E., Lecturer on Midwifery and Diseases of Women, School of the Royal Colleges, Edinburgh, Physician Royal Maternity and Simpson Memorial Hospital, Edinburgh, &c., &c. Sixth Edition. Pp. xxxiii + 736. With 12 Lithographs and 359 Woodcuts. Edinburgh and London: W. & A. K. Johnston, Ltd. 1904.

The sixth edition of this well-known work has been thoroughly revised and brought up to date, and many new illustrations have been added. The style of the book is so well known that it is unnecessary to refer at length to its advantages or drawbacks, and it appears to us that the point of most interest that offers itself for criticism is the relation of the book to modern gynæcology. The first edition of "Hart and Barbour" was published in 1882, when it occupied the foremost place in British gynæcological literature. The sixth edition has been published in 1904. What position is it likely to occupy? We fear that there are few writers who are able to maintain the standard of their work for a period of twenty-two years in the face of changes as great as those that have affected the subject of gynæcology. However much one may strive to keep apace with the times, it is difficult to remove entirely the principles and theories which one has believed to be true, and which time and research have controverted, and they necessarily form a great part of the background, and even tinge the entire work. It is so with the book before us. When it was in its infancy and childhood it occupied, as we have said, the foremost place. Now we doubt that it will meet with the requirements or approval of the modern gynæcologist.

The introductory and anatomical portions of the book—as is only to be expected—are extremely good, and so is much of the purely scientific and theoretical portion. The practical portion does not, however, impress us so favourably. The subject of bi-manual examination—the most important method of diagnosis in our possession—is discussed in about six pages, and the general tone of the description is discouraging, although the value of the method is fully admitted. A little further on some seventeen pages are devoted to the use of the volsella (*sic*), vaginal specula, and the sound. In the pages devoted to the last-named instrument comes the following statement:—"The means to avoid setting up any inflammatory disturbances" (after the use of the sound) "are—to perform the bi-manual carefully, to curve and oil the sound properly, and to pass it gently and with antiseptic precautions." Might not the last have been placed first, and the remainder then omitted? We are sure that this paragraph crept in, or rather remained in, through inadvertence, but its existence shows the difficulty of modernising a book of this kind.

Later in the work, where the authors deal with the subject of pelvic cellulitis, we are informed that "it is the rare exception to examine a multiparous female pelvis without finding some trace of a previous cellulitis or peritonitis." This is an indictment either of Scottish morality or of Scottish medical practitioners that we can hardly believe to be justifiable. If it is true, it is a remark that is certainly inapplicable to Ireland. Later, in the same section, appears the following confession:—"We do not believe that mere traumatic injury, apart from septicity and tension, can cause an inflammatory attack." We do not think that anyone would have accused the authors of possessing such a belief, and so, perhaps, the sentence is liable to give rise to misconception. There is a long article on "Deciduoma Malignum," but, strange to say, although the chapter is prefaced with an ample list of "literature," there is no reference to Teacher's most important paper on this subject. Indeed, the references to literature that appear at the head of each chapter are very incomplete, and have apparently been revised and added to in a most scrappy manner since 1896. A list of works on gynæcological subjects that appears at the end of the book also sadly requires revision. In this list half a page is devoted to an account of the "American System of Gynæcology and Obstetrics," published in 1887, and at the same time there is no reference to several current gynæcological works. This is fair neither to the reader nor to the authors of the omitted works.

A number of very excellent illustrations have been added, but a number of those that appeared in former editions have been again reproduced, although they might have been very well omitted. Do the authors use Zwanke's pessary? If they do not use it, why show a drawing of it? The same remark applies to Meadow's compound stem pessary.

We trust that the authors will excuse us for criticising their work as we have done, and we desire to express the hope that in the near future they may find time to re-write their book from the first to the last page. In its present form it is a typical "English" gynæcology, and from the Celtic fringe we expect something better.

Autobiography of Frederick James Gant, F.R.C.S.; Consulting Surgeon to the Royal Free Hospital; Author of Works on Surgery, Science, and Religion, and Women of the Times. London: Baillière, Tindall & Cox. 1905.

The autobiography of a leading member of the healing art is sure to contain items of special interest. And not only has the professional experience of Mr. Gant been extended across wide ranges over the domains of time and space, but his chosen intellectual digressions in the domain of authorship show a peculiar loftiness of aim. As the title-page of the present volume indicates, our author has not only enlightened his generation on the subject of his own profession of surgeon; he has also given them his opinions on the three most complex entities which (probably) have ever inspired the pen of author or philosopher—or both: *Science, Religion,* and *Women!*

Mr. Gant was born on December 3, 1825; so that he will close his octogenarian record in the last month of the present year. But a more encouraging item in connection with the questions of survival and prognosis will be found on page 43, where the writer informs us that:—"Arriving in England May 6, 1856, I was then an emaciated, tottering, back-bowed old man, unknowable to my relations and most intimate friends; even persons in the streets stared at the spectre. My military life was concluded by an order from the War Office to attend and receive the Crimean War medal with clasp for Sebastopol. I was duly decorated by a field officer in the name of Her Majesty the Queen. Although I slowly regained health and more than my former vigour, I was for a long period too weak to do homage at Court as I could have wished, thus to finish this episode in my life." It is somewhat difficult to realise in a moment that an author can felicitate himself by penning such a record of survival after an interval of almost a complete half century. We take the opportunity of cordially congratulating Mr. Gant that he is able to do so; and to give us the record of a useful and fruitful career prolonged through this unexpectedly expanded interval. And, as the professional record is an honourable and instructive one, we recommend our readers to peruse it for themselves. On this account we make no further extracts.

The Scottish Medical and Surgical Journal. Edited by NORMAN WALKER, M.D., F.R.C.P.; and HAROLD J. STILES, M.B., F.R.C.S. Vol. XV. (July to December). With Ten Plates. Edinburgh: The Scottish Medical and Surgical Journal, Ltd. 1904.

THIS portly octavo bids fair to maintain—and increase—the reputation of its predecessors. Binding, type, paper, and illustrations are all of the best, and are calculated to impress the over-read critical reviewer most favourably. And there are several articles of really superior excellence. We will not proceed further than to mention one of the very earliest in the volume—"Glaucoma and the Glaucoma Theories," by J. V. Paterson, M.A., F.R.C.S.—which is also richly illustrated.

Gall-Stones and their Surgical Treatment. By B. G. A. MOYNIHAN, M.D. (Lond.), F.R.C.S., Leeds. Fully illustrated. Philadelphia, New York, and London: W. B. Saunders. 1905. Pp. 386.

THIS book is the outcome of a course of lectures delivered by Mr. Moynihan at the Medical Graduates' College in London during April and May, 1904. In the eleven chapters into which the work is divided the reader will find everything that is known on the subject. His own practice and his association with Mr. Mayo Robson for so many years have given the author an experience from which he can speak with authority, while the reader of modern surgical literature on this subject will not fail to observe that the writings and work of others experienced in gall-bladder surgery have been consulted and evidently approved by Mr. Moynihan. It would be hard indeed to single out any one chapter of more importance than another. The reader will find each section pregnant with useful information such as could emanate only from a good practical surgeon who is himself a keen and accurate observer. The chapter in which he details his own preparatory technique is alike interesting and instructive. Under the heading Cholecystectomy we read the following sentence:—"The result of my early cases was so satisfactory that I was led to put the operation to a more extended proof, and as my experience increases I am tempted to ask whether it would not be the better treatment in many gall-stone operations to remove the gall-bladder entirely." Those who have read Kehr's writings on this subject will remember that that practical surgeon, from an unrivalled experience, came to that conclusion some years ago, and, as well as we remember, Kehr in his last few hundred cases, published about one and a half or two years ago, removed the gall-bladder entirely in at least 75 per cent. of them. The suggestion, then, is not by any means original, and our own limited experience of this procedure leads us to believe it is the correct one to adopt. The mortality attending it is but one per cent. higher in the hands of some surgeons than the older procedure of cholecystostomy, while in our own hands it is exactly the same. Unless the cases are very seriously complicated the mortality should be almost at vanishing point. We heartily congratulate Mr. Moynihan, and strongly recommend his work to every physician and surgeon who wishes to make himself thoroughly acquainted with the modern state of the surgical treatment of gall-stones.

The Surgical Treatment of Bright's Disease. By GEORGE M. EDEBOHLS, A.M., M.D., LL.D.; Professor of the Diseases of Women in the New York Graduate Medical School and Hospital; Consulting Surgeon to the St. Francis Hospital, New York; Consulting Gynæcologist to St. John's Riverside Hospital, Yonkers, N. Y., and to the Nyack Hospital, Nyack, N. Y.; Fellow of the New York Academy of Medicine, and of the American Gynæcological Society; Honorary Fellow of the Surgical Society of Bucharest; Permanent Member of the Medical Society of the State of New York, &c. New York: Frank F. Lisieski. 1904. Pp. 327.

ANYONE who reads current medical literature must be already familiar with the views of Dr. Edebohls on the surgical treatment of Bright's disease, for he cannot be accused of reticence in connection with his work. The volume before us consists very largely of papers published by the author at various times, with details of a large number of cases. The author tells us in his preface that there is a manifest desire on the part of the medical profession for such facts and information, especially as regards results, as may at present be available concerning the new treatment of so common and fatal a malady as chronic nephritis. That this is so no one will deny, but whether the perusal of the present volume will satisfy that demand is at least open to question. When one finds statements in a book or paper which are obviously either due to ignorance or carelessness one will naturally hesitate to accept the conclusions arrived at therein. One good effect the book will have, and it is that it will direct the attention of physicians and surgeons once more to such cases, and for this reason we can recommend its perusal.

Medical Tuberculosis: Its Rational and Natural Cure: Its several Stages and Relationsip to Cancer. By R. B. SEARLE, L.R.C.P., M.R.C.S., L.S.A.; Mayor of Dartmouth. London: The Scientific Press, Ltd. 1904. Pp. 40.

THIS little book, which is pompously dedicated to "Philanthropists of all Nations," suffers from "the fatal fault of diffusiveness." Amidst a great deal of platitude regarding almost every topic which has interested the medical world during recent years, the author states that it is now more than forty years since his attention was first drawn to the declaration of a physician of high standing and wide experience, that neither he nor his friends had ever met with anyone suffering from organic disease (consumption or cancer) dying from typhoid fever. From this experience, backed by his own, he comes to the conclusion that the "rational and natural" method of curing tuberculosis is by the inoculation of the material "which produces typhoid fever." He does not appear to have tried the method himself, and we confess that we do not think the perusal of his book will induce any sane physician to do so.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—SIR THORNLEY STOKER, M.D., F.R.C.S.I.
General Secretary—JAMES CRAIG, M.D., F.R.C.P.I.

SECTION OF SURGERY.

President—ARTHUR CHANCE, P.R.C.S.I.
Sectional Secretary—EDWARD H. TAYLOR, M.D., F.R.C.S.I.

Friday, December 2, 1904.

THE PRESIDENT in the Chair.

Exhibits.

MR. R. C. B. MAUNSELL exhibited a child after operation for spina bifida, also the meningocele which he had removed.

MR. KENNEDY exhibited (*a*) an infant operated on for intussusception; and (*b*) a child treated for hydrocephalus by repeated lumbar puncture.

MR. BLAYNEY exhibited a Gasserian ganglion removed for epileptiform neuralgia.

MR. W. TAYLOR exhibited (*a*) a gall-bladder removed for gangrenous cholecystitis; and (*b*) a hydronephrotic kidney.

A New Method of Procedure for the Radical Cure of Inguinal and Femoral Herniæ.

MR. EDWARD H. TAYLOR read a paper so entitled, and illustrated its various stages by means of lantern slides. Having introduced the subject by some general remarks concerning the anatomy of the inguinal canal and the aims of herniotomy, he proceeded to explain his method of operation. With the patient in the Trendelenberg position, a vertical incision about four inches in length is made midway between the middle line and the outer border of the rectus muscle, in its lower part. The superficial tissues and the rectus sheath having been divided, the outer lip of the divided sheath is raised and the corresponding border of the muscle is defined and drawn inwards. The transversalis fascia is then divided and the extraperitoneal fat exposed. The next step consists in fully retracting the outer margin of the wound towards Poupart's ligament, and identifying the neck of the hernia. By seizing the parietal peritoneum close up to the internal abdominal ring with the finger and thumb, the sac is drawn up to some extent out of the inguinal canal and opened, after which a finger is introduced into its interior to act as a guide while it is being separated from the structures of the cord. A ligature or purse-string suture is then applied to the neck of the sac, and the fundus is cut away. The inguinal canal and the two rings are now explored by the finger, the structures of the cord are identified, and the deep epigastric vessels are held aside. By means of special needles in handles—modifications of the ordinary aneurysm needle with a slot at one side opening into the eye—a series of silk sutures (No. 6 size) are passed so as to connect the conjoined tendon and the transversalis muscle with Poupart's ligament, just enough space being left to allow the structures of the cord to pass without being unduly compressed. The rectus muscle now resumes its normal position, but for greater security its outer border is connected to the deep aspect of the transversalis muscle by a few interrupted sutures. Finally, the rectus sheath is closed in front by interrupted sutures also, and the skin margins are approximated by a continuous subcuticular suture of silkworm-gut. Should the external abdominal ring be unduly patulous it may be readily exposed before closing the wound by drawing aside or reflecting the overlying tissues, and its dimensions may be reduced by one or two sutures. In the case of femoral hernia the steps of the operation corresponded to the above up to the point at which the femoral ring is exposed. The sac is isolated as already described, ligatured at its neck, and its fundus is cut away. The closure of the femoral ring is then effected. Two sutures generally suffice for this purpose. Each passes through the conjoined tendon and Poupart's ligament in front, beneath Cooper's ligament behind. In some cases it is advisable to pass them through two holes previously drilled in the pubic bone. Mr. Taylor pointed out that a somewhat similar method for occluding the femoral ring had been described by Mr. Mayo Robson in the "Year-Book of Treatment" (1904), but, nevertheless, it differed from his in certain important particulars.

Mr. Jameson-Johnston expressed himself in favour of Bassini's operation, as he considered it the simplest, most scientific, and the easiest. He regarded the objection to dividing the aponeurosis of the external oblique in this operation as more or less theoretical. Mr. Taylor's operation would probably be a good one in old herniæ, in which the internal abdominal ring approached the middle line.

Mr. T. E. Gordon considered there was no one method of operation for hernia. Mr. Taylor's method was not suitable in the case of a congenital hernia in a young child. He believed that many of the operations practised were hopeful as regarded ultimate success. The essential thing in these operations was asepsis.

Sir Thomas Myles referred to the valve-like nature of the inguinal canal. So long as its anterior and posterior walls remained in contact and the muscles are sufficiently tense a hernia was unable to push these walls apart. He thought there was a hereditary predisposition to hernia. The valve-like closure of the canal, due to muscular action, was essential, and that being so, no amount of suturing of the conjoined tendon to Poupart's ligament would provide an obstacle to recurrence, because sufficient space had to be left to permit the cord to pass.

Mr. Blayney was of opinion that the weakness of the abdominal wall in the inguinal region was for a special purpose—viz., to allow the thin fascia transversalis to be pushed against the external oblique when the intra-abdominal pressure was increased.

Mr. Taylor, in reply, stated that he believed his method of operation was best suited for large, well-developed inguinal herniæ, in which the inguinal canal had undergone marked changes in size and direction. As bearing upon the success of the procedure he thought it of importance to mention that the sutures in the conjoined tendon should not be tied too tightly, and that the parts should be kept at rest for a sufficient time afterwards to permit of healing taking place. Patients were frequently allowed to get about too soon after herniotomy; absolute rest for at least a fortnight was desirable. As to the mode of development of an inguinal hernia, he thought it probable that there was in many instances a degree of congenital weakness at the internal abdominal ring, in consequence of which the latter went on increasing in size. There was such a thing as a hernial type of abdomen, and it was in such cases that weakness or dilatation at the internal abdominal ring was most likely to be found. Upon the hernia commencing to develop, the conjoined tendon and the fascia transversalis yielded more and more, and the inguinal passage became progressively larger and less oblique in its direction.

Acute Intestinal Obstruction from a Gall-Stone.

Mr. T. E. Gordon read an account of the following case:—The patient, aged seventy-three, had an attack of biliary colic in February, 1904, and she did not recover fully from this for two months. On August 6th she was seized with intense pain in the liver region, and this was followed by complete obstruction of the bowels. Three stages in the course of the illness were clearly defined: (1) A stage of onset lasting from August 6th to August 7th, marked by intense epigastric pain and vomiting, but without fever; (2) a stage of quiescence lasting until August 9th; (3) a stage with unequivocal signs of intestinal obstruction. The operation was performed by Mr. Gordon on August 11th. A gall-stone was found firmly impacted in the upper part of the jejunum. After the operation all vomiting ceased, and the patient was able to leave her bed in about a fortnight. Mr. Gordon, in attempting to interpret the clinical signs, said he thought it probable that impaction did not occur prior to the third stage. It was difficult to understand why a stone of such small size should cause intestinal obstruction. Spasm was obviously an important factor.

Mr. W. Taylor stated that he had seen the patient a few days before Mr. Gordon performed the operation, and on the day before he left town for his holiday. She was then under the influence of opium. He thought that at that time the gall-stone made its exit from the bile passages. At the same time, however, he had not overlooked the possibility of intestinal obstruction. He would like to know if any reasonable explanation could be offered why a calculus of this size should become impacted.

Sir Thomas Myles alluded to a case in which he had removed a large impacted gall-stone fifteen years ago. He thought it likely that the impaction in the present case was due to the opium administered, the muscular tissue of the bowel being paralysed. He would advise in such cases that the incision into the intestine be made not directly over the gall-stone, but on the proximal side, as otherwise one cut through infiltrated and devitalised tissues.

Mr. Jameson-Johnston inquired as to the amount of distension present and the condition of the bowel at the site of impaction. Mr. Gordon alluded to spasm, but he did not think spasm could exist under the conditions present—viz., inflammatory infiltration and œdema of the bowel wall.

Mr. Blayney thought the impaction of the gall-stone in the present case might be due to its rough exterior, by which the mucous membrane of the intestine was irritated and abraded, thus permitting micro-organisms to act. This resulted in œdema of the sub-mucous tissue which extended inwards rather than outwards. He believed the impaction was due more to inflammatory œdema than to spasm.

Mr. Gordon, in reply, said he thought some of the suggestions which had been made as to the cause of the impaction were correct, but he himself had none to offer. The abdominal distension was not very great. He made the parietal incision above the umbilicus, because the early pain complained of was referred to the upper part of the abdomen.

SECTION OF PATHOLOGY.

President—H. C. Earl, M.D., F.R.C.P.I.
Sectional Secretary—A. H. White, F.R C.S.I.

Friday, January 6, 1905.

The President in the Chair.

Anæmic Infarction of Liver.

Professor O'Sullivan, for Dr. Roy Dobbin, showed specimens from a case of extensive anæmic infarction of the liver. The case was one of puerperal eclampsia, with jaundice. A large gall-stone was impacted in the upper end of the gall-bladder. The smaller branches of the hepatic artery showed an extensive degeneration of the walls, commencing in the muscle cells of the middle coat, and accompanied by a similar change in the walls of groups of capillaries in the neighbourhood of the branches of the artery. The degenerated material took on Weigert's fibrin stain deeply, and gave none of the amyloid reactions. Hyaline thrombi were present in some of the arteries. The walls of the hepatic and portal veins were healthy. Some of the portal veins inside the infected areas were thrombosed.

Endothelioma of Uterus.

The **President** and **Mr. Maunsell** showed an endothelioma of the uterus.

Professor O'Sullivan thought that in the present state of knowledge in regard to endotheliomata, unless one could establish the transition from the ordinary endothelium of the lymph space to the tumour endothelium, the diagnosis was not justified.

The **President** agreed with Professor O'Sullivan's remarks, and admitted that there were many parts of the tumour from which nobody could possibly establish a diagnosis.

Myoma of Rectum.

The **President** showed a large myoma of the rectum which was removed by Dr. Frank Golding, of Headford, from a woman during parturition. The tumour measured three and a half inches in its longest diameter by two and a quarter inches in its shortest. It presented some patches of calcification near its surface. It was attached to the wall of the rectum by a thin membrane.

Dr. Travers Smith asked was there any possibility of it being a uterine tumour which had found its way out *per rectum?*

The **President** said he did not think it was a uterine myoma, because he believed that if a patient had had a myoma like that eating into her bowel she would have complained about it. Dr. Golding had also given a distinct history of its having a membranous attachment, which would not have been present if the tumour had eaten its way into the rectum.

Pott's Caries.

Mr. Gunn exhibited a case of Pott's caries.

Gastric Ulcer.

Mr. Gunn showed a gastric ulcer which he thought was of a tuberculous nature.

Professor O'Sullivan said he would like to ask the reason for supposing the ulcer to be tuberculous. The rarity of tuberculous conditions in the stomach made it worth while to examine it carefully if it was supposed to be tuberculous.

Mr. Gunn said the reason he thought it so was that there was old tuberculous disease of the abdomen and active tuberculosis of the lungs, the patient probably swallowing a lot of the sputum. The ulcer was also tuberculous-looking, having thin, undermined edges.

SECTION OF MEDICINE.

President—W. J. Smyly, M.D., P.R.C.P.I.
Sectional Secretary—R. Travers Smith, M.D., F.R.C.P.I.

Friday, January 20, 1905.

Sir John Moore, M.D., in the Chair.

Paratyphoid Fever.

Dr. Parsons read notes of three cases of continued fever in which for some time the diagnosis was obscure. They all occurred in the same building and about the same time. Case I. proved to be a severe case of typhoid fever, and gave a definite Widal with Eberth's *Bacillus typhosus* on the 12th day of the illness. The pyrexia lasted for 50 days. Case II., though tested on three separate occasions by different strains of *Bacillus typhosus*, gave no reaction, but gave very definite clumping with Gärtner's *Bacillus enteritidis* on two occasions, and with different strains. The pyrexia lasted 21 days. Case III. was also negative with *Bacillus typhosus*, but positive with Gärtner. The pyrexia lasted 14 days. In all the cases the subjective phenomena were headache and malaise. The objective signs were temperatures of 102° to 104° F., while the average pulse was only 90. In none of the cases was the spleen palpable, and only in Case I. were any spots visible. Cultures were made from the urine and fæces in the latter cases, but the *Bacillus enteritidis* was not isolated. Dr. Parsons referred to cases of paratyphoid reported in *The American Journal of Medical Science*, and pointed out the necessity for isolating various strains of paratyphoid bacilli against which the blood of obscure cases of continued pyrexia might be tested. Owing to the general absence of ulceration in paratyphoid fever he was of the opinion that the diet need not be quite so rigid as in typhoid fever.

Dr. Craig described minutely a fatal case of paratyphod which he had seen and reported. He admitted the man from the dispensary of the Meath Hospital. The patient was then looking very like typhoid. His temperature was 103.2°, pulse 100, and respirations 24. He had three liquid yellow motions, and developed a rash, which at first consisted of rose spots, but later became dark, like typhus. The tongue was thickly coated, cerebration slow, and he refused food. The abdomen was distended. He became delirious, and 17 days after the rigor which had ushered in the illness he died. The pulse averaged 95 to 100, and respirations 24. The spleen was easily noted to be enlarged. *Post-mortem* there was no evidence of enlargement or ulceration of Peyer's patches, but the greater part of the ileum was in a state of acute inflammation. Dr. White examined the blood on the 4th day after admission. He tried a Widal, and got clumping with a dilution of 1 in 25. There was no evidence of Eberth's bacillus, but one of the forms of *Bacillus enteritidis* had caused the illness. In a number of cases hæmorrhage from the bowel had been observed.

Dr. Travers Smith said he had seen two cases which he thought were paratyphoid. One was a woman, aged thirty-two. On admission her temperature was 103°, pulse not markedly quick, no diarrhœa, enlarged spleen, or rose spots; but there was great abdominal distension, and she was rather livid. The blood was negative to Widal. She died in about a week, and *post-mortem* there was not a trace of disease in Peyer's patches, nor was the spleen enlarged. In the other case the tongue was coated, spleen a little enlarged, pulse rather quick, and the temperature up. The blood was negative to Widal. The fever gradually subsided; but for ten days the spleen remained large, then it subsided, and she got perfectly well. He suspected paratyphoid, but had no proof of it, as the special blood reaction had not been tested for.

Dr. Pugin Meldon thought that in paratyphoid one should be just as careful with regard to diet as in typhoid, as in some cases there had been hæmorrhages, showing disease of the intestine. The presence of a large ulcer had been reported in one case.

Dr. Fannin said he had had a case of a boy, aged seventeen, who had a continued fever, the characters and course of which were the same as typhoid. There were no rose spots, nor was there enlarged spleen. He had acute laryngitis. At that time Widal was negative. Ten days after the temperature had become normal a relapse occurred. It followed a typhoid course, the laryngeal symptoms were renewed, rose spots appeared, and the spleen became palpable. He became very ill, and was removed to hospital. Two or three days afterwards symptoms of perforation occurred. An operation was performed, and a perforated ulcer discovered, but the patient did not recover. Dr. W. J. Thompson was satisfied that the ulcer was like an ordinary typhoid one. In that case, then, repeated examinations of the blood had failed to give the Widal reaction. The course of the illness resembled typhoid, and a fatal result occurred after perforation, therefore it was possible that some forms of paratyphoid could have the definite ulceration of Peyer's patches.

Dr. Kirkpatrick said he would like to ask whether any differentiation had been made in the clinical history of the fevers which were due to the different groups of paratyphoid bacilli?

Dr. McWeeney discussed the cases from a pathological point of view. He said that one would be inclined to call Dr. Parsons' 2nd and 3rd cases, cases of Gärtner infection. It had been mentioned that the blood serum failed to agglutinate typhoid, but did agglutinate Gärtner's bacillus. That carried an indication of Gärtner infection, which was not quite the same thing as paratyphoid. The Gärtner bacillus was not quite the same type as the alpha and beta groups of paratyphoid, but presented certain differences. It was quite possible that the 2nd and 3rd cases were paratyphoid, but the bacilli would have had to be isolated and their characters fully tested. What he found lacking in the pathological description was a statement of the different dilutions which were employed.

Dr. Parsons, during his reply, said that intestinal lesions had been mostly found to be in abeyance during paratyphoid, and thought it was not so necessary to restrict the diet as in typhoid. There was no difference in the clinical course of the fevers produced by the alpha and beta groups. In his communication he had used the term paratyphoid in its widest sense, and had included Gärtner's bacillus in the term, although he was aware that there was a tendency to restrict the term to a small group of bacilli.

Two Cases of Large White Kidney.

Dr. Peacocke described the clinical history of two cases which had been recently under his care. The symptoms of each case were very similar, and were briefly—anæmia, universal dropsy, diarrhœa, and scanty highly albuminous urine, containing numerous casts. The kidneys were found to be, macroscopically, large white kidneys; but, microscopically, while both showed some increase in connective tissue, one was found also to show commencing amyloid degeneration. He discussed the causation of chronic parenchymatous nephritis, and was in favour of regarding the disease as originating always in a previous attack of acute nephritis. The cases described as chronic from the beginning were either cases in which the acute attack had been overlooked or were examples of lardaceous degeneration. He considered the best classification of diseases of the kidney associated with albuminuria was as follows:—(1) Nephritis, acute and chronic; (2) granular kidney; (3) the kidney of lardaceous disease.

Dr. McWeeney.—With regard to the microscopic specimens, the impression he got from those of the second case was that it was far from certain whether it was really amyloid degeneration or hyaline. The section showed hyaline change of portion of the glomeruli, but there was no differential staining to show whether there was also amyloid change. The question might have been answered by seeing whether the middle coat of some of the smaller arteries was affected in the same way, but he had failed to see this change. Therefore he was inclined to think it was hyaline degeneration. The other section also showed hyaline changes in the glomeruli, but not to the same extent. A pathologist would diagnosticate the second case as early chronic interstitial nephritis.

Dr. Travers Smith said that his experience went to show that chronic parenchymatous nephritis was insidious in onset. The history of the onset was often misleading. One saw a good many cases of acute nephritis occurring during scarlatina; he had never seen these cases coming back suffering from chronic parenchymatous nephritis, and he did not think it could be common. One of Dr. Peacocke's cases exemplified the difficulty of diagnosticating a mild acute case from chronic parenchymatous nephritis, and this was a serious question from a prognostic point of view. In both one might have extensive dropsy, the quantity of urine diminished, hyaline and epithelial casts, blood—all this made it very difficult to come to a diagnosis, particularly in those cases where there was no antecedent cause, such as scarlatina.

Dr. Kirkpatrick said that in examining microscopic sections of kidney disease it was very important to examine all the fields carefully, and to make large sections. When large portions were examined, although they differed in one part from another, yet many of the kidneys had various points in common. A classification thus became possible; but he thought that any classification based on histology alone was unsatisfactory. All of these diseases were more or less of the nature of inflammations, and the effect of the inflammation was evident in one in the parenchyma, in another in the interstitial substance. There were many cases where the differences were so pronounced that one was justified in putting them into different classes; but, when one examined further, the changes were completely progressive, and from the most typical acute nephritis to the most well-marked chronic case there was no distinct breach of continuity on microscopic examination.

PROFESSOR WHITE said that he had had an opportunity of applying the special tests for amyloid substance to the sections, and found that a small portion was really amyloid, though the major portion was hyaline.

DR. DRURY said he did not know that he could agree with the statement that many cases of chronic parenchymatous nephritis resulted from acute. He had been for a long time trying to find *bonâ fide* acute cases which turned into chronic, but had never found them. He thought that many of the cases of chronic nephritis, secondary to acute, were really chronic cases in which acute exacerbations had come on during already existing disease. One had to know the history beforehand. He thought that Dr. Peacocke was inclined to lay too much stress on amyloid change as being the primary cause of many chronic tubular cases.

The CHAIRMAN quite agreed that chronic parenchymatous nephritis seldom followed on scarlatinal nephritis, which was usually succeeded by complete recovery. With regard to causes, he did not hesitate to assign alcohol as of prime importance, though various other causes co-operated, as cold and damp. He also thought the mode of death was important in these cases. Toxæmia was comparatively infrequent in very dropsical cases, whereas in the other cases it was very likely to cause death. The heart was really the crucial point in the management of nephritis, for as long as it could compensate for the renal insufficiency there was some chance of the patient getting on.

DR. PEACOCKE, in his reply, said that the cause of death in both of his cases was nothing very definite. Asthenia was the best term to use for it. In these acute cases which developed into chronic there was often an interval of some months before the latter symptoms came on. He did not agree that the symptoms of amyloid disease were so apparent that you could always come to a diagnosis. He believed that amyloid change did occur even when there was not much suppuration. There was no doubt that very often in those cases which were described as chronic parenchymatous nephritis and large white kidney there was marked amyloid change.

WELFARE WORK.

One of the most promising movements of modern times towards the moral, intellectual and physical betterment of employees is known by the significant name of Welfare Work. As a rule a "welfare manager" is appointed. He is a recognised intermediary between employer and employed, and his exclusive duty is the improvement of the conditions of workers. Many great industrial concerns in America have adopted this additional means of caring for their staffs, and in Great Britain the idea is receiving favourable consideration. Amongst the English firms that have an international reputation for welfare work are Messrs. Cadbury Bros., Ltd., Lever Bros., Ltd., and Messrs. Burroughs, Wellcome & Co. In America the National Cash Register Company—the pioneer in welfare work—is a living example of the great benefits which employers and employees derive from liberal and broad-minded treatment of their helpers. A convention of continental and district managers of the N. C. R. Co. is being held in London, and it was singularly appropriate that a visit should be made to the Wellcome Club at Dartford, an institution provided by Mr. Henry S. Wellcome for the 1,200 employees of Burroughs, Wellcome & Co., the wholesale druggists. The forty N. C. R. delegates journeyed to Dartford on Thursday, January 19th, by automobile, and inspected the club, houses, gymnasium, library, baths, sports fields, park, &c., &c. Dinner was served in the staff club house, followed by speeches by Mr. R. Clay Sudlow, General Manager of Burroughs, Wellcome & Co., and by Mr. Robert Patterson, the Vice-President of the National Cash Register Company. Subsequently an illustrated lecture, showing the Welfare Work now being done at the N. C. R. Factory, was delivered to an audience of over 500 staff and employees of Burroughs, Wellcome & Co. in the club assembly rooms. The visit, like the movement, is one of good omen for the happier relations of employers and employed throughout the civilised world.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by the EDITOR.

VITAL STATISTICS.

For four weeks ending Saturday, January 28, 1905.

IRELAND.

TWENTY-TWO TOWN DISTRICTS.

THE average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending January 28, 1905, in the Dublin Registration Area and the twenty-one principal provincial Urban Districts of Ireland was 24.5 per 1,000 of their aggregate population, which for the purposes of these returns is estimated at 1,093,959. The deaths registered in each of the four weeks ended Saturday, January 28, and during the whole of that period in the several districts, alphabetically arranged, correspond to the following annual rates per 1,000 :—

TOWNS, &c.	Week ending				Average Rate for 4 weeks	TOWNS, &c.	Week ending				Average Rate for 4 weeks
	Jan. 7	Jan. 14	Jan. 21	Jan. 28			Jan. 7	Jan. 14	Jan. 21	Jan. 28	
22 Town Districts	22.1	23.1	21.0	24.5	22.7	Lisburn -	9.1	27.3	13.6	31.8	20.5
Armagh -	13.7	13.7	27.5	27.5	20.6	Londonderry	26.0	11.2	16.1	32.2	21.4
Ballymena	14.4	19.2	14.4	23.9	18.0	Lurgan -	17.7	53.1	35.4	17.7	31.0
Belfast -	22.2	22.5	22.4	24.1	22.8	Newry -	21.0	16.8	12.6	8.4	14.7
Clonmel -	25.6	25.6	10.3	15.4	19.2	Newtownards	22.1	28.6	28.6	5.7	21.3
Cork -	24.0	28.8	24.7	27.4	26.2	Portadown	20.7	20.7	15.5	25.8	20.7
Drogheda -	20.4	16.3	8.2	32.7	19.4	Queenstown	6.6	6.6	33.0	33.0	19.8
Dublin (Reg. Area) -	25.6	22.6	21.2	25.5	23.7	Sligo -	14.4	9.6	14.4	24.0	15.6
Dundalk -	12.0	23.9	19.9	27.9	20.9	Tralee -	5.3	10.6	15.9	10.6	10.6
Galway -	19.4	46.6	35.0	35.0	34.0	Waterford	9.7	23.4	13.6	11.7	14.6
Kilkenny -	19.7	44.2	14.7	14.7	23.3	Wexford -	4.7	42.0	23.3	28.0	24.5
Limerick -	16.4	20.5	15.0	20.5	18.1						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases, registered in the 22 districts during the week ended Saturday, January 28, 1905, were equal to an annual rate of 2.1 per 1,000, the rates varying from 0.0 in thirteen of the districts to 5.3 in Tralee. Among the 166 deaths from all causes in Belfast are 11 from measles, 2 from scarlet fever, one from whooping-cough, one from diphtheria, one from enteric fever, and 3 from diarrhœal diseases. The 40 deaths in Cork include one from enteric fever and one from diarrhœa.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of this area is 378,994, that of the City being 293,385, Rathmines 33,203, Pembroke 26,025, Blackrock 8,759, and Kingstown 17,622.

In the Dublin Registration Area the births registered during the week ended January 28, amounted to 232—120 boys and 112 girls; and the deaths to 192—90 males and 102 females.

DEATHS.

The deaths registered represent an annual rate of mortality of 26.4 in every 1,000 of the population. Omitting the deaths (numbering 7) of persons admitted into public institutions from localities outside the area, the rate was 25.5 per 1,000. During the four weeks ending with Saturday, January 28, the death-rate averaged 24.6, and was 5.5 below the mean rate for the corresponding portions of the ten years 1895–1904.

The deaths which were registered during the week ended January 28 include 13 from measles, 2 each from scarlet fever and whooping-cough, and one from dysentery. Two deaths from influenza were registered. In the 3 preceding weeks the deaths registered from measles were 3, 12, and 5, respectively.

One death from lobar pneumonia, 4 deaths from broncho-pneumonia, and 6 deaths from *pneumonia* (not defined) were registered.

The number of deaths attributed to tuberculous disease amounted to 46. This figure comprises 9 deaths from tubercular phthisis, 23 deaths from *phthisis*, 4 deaths from tubercular meningitis, 3 deaths from tubercular peritonitis, 2 deaths from *tabes mesenterica*, and 5 deaths from other forms of the disease.

One death from carcinoma was registered.

The deaths of 3 infants prematurely born were recorded.

Of 16 deaths which were assigned to diseases of the brain and nervous system, 7—all of children under 5 years of age—were ascribed to *convulsions*.

Twenty-five deaths from diseases of the heart and blood-vessels were registered.

Bronchitis was the cause of 28 deaths.

Of 5 deaths from accidental causes 2 were due to burns, one of the latter being that of a child 4 years of age.

In 8 instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases include the deaths of 3 children under 5 years of age (including one infant under one year old) and the deaths of 2 persons aged 60 years and upwards.

Fifty-six of the persons whose deaths were registered during the week ended January 28 were under 5 years of age (26 being infants under one year, of whom 8 were under one month old), and 55 were aged 60 years and upwards, including 20 persons aged 70 and upwards, of whom 12 were octogenarians, and one (a man) was stated to have been aged 91 years.

The Registrar-General points out that the names of the "Cause of Death" printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

The usual returns of the number of cases of infectious diseases notified under the "Infectious Diseases (Notification) Act, 1899," as set forth in the following table, have been furnished by Sir Charles A. Cameron, C.B., M.D., Medical Superintendent Officer of Health for the City of Dublin; Mr. Fawcett, Executive Sanitary Officer for Rathmines and Rathgar Urban District; Mr. Manly, Executive Sanitary Officer for Pembroke Urban District; Mr. Heron, Executive Sanitary Officer for Blackrock Urban District; Dr. Byrne Power, Medical Superintendent Officer of Health for Kingstown Urban District; and Dr. Whitaker, Medical Superintendent Officer of Health for the City of Belfast.

ABLE SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfast, during the week ended January 28, 1905, and during each of the preceding three weeks. An asterisk (*) denotes that the disease in question is not notifiable in the District.

CITIES AND URBAN DISTRICTS	Week ending	Small-pox	Measles	Rubella, or Epidemic Rose Rash	Scarlet Fever	Typhus	Relapsing Fever	Diphtheria	Membranous Croup	Continued Fever	Typhoid or Enteric Fever	Erysipelas	Puerperal Fever	Varicella	Whooping-cough	Cerebro-spinal Meningitis	Total
City of Dublin	Jan. 7	-	*	*	8	-	-	4	-	-	7	6	-	*	*	*	25
	Jan. 14	-	*	*	7	-	-	3	-	8	6	16	-	*	*	*	40
	Jan. 21	-	*	*	10	-	-	4	-	5	7	8	-	*	*	*	34
	Jan. 28	-	*	*	3	-	-	5	-	10	5	12	-	*	*	*	35
Rathmines and Rathgar Urban District	Jan. 7	-	*	*	2	-	-	-	-	-	1	-	-	*	*	*	3
	Jan. 14	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	Jan. 21	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	Jan. 28	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
Pembroke Urban District	Jan. 7	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1
	Jan. 14	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	2
	Jan. 21	-	4	-	4	-	-	-	-	1	-	1	-	-	-	-	10
	Jan. 28	-	-	-	-	-	-	1	-	1	-	-	-	-	1	-	3
Blackrock Urban District	Jan. 7	-	*	*	-	-	-	1	-	-	-	-	-	*	*	*	1
	Jan. 14	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	Jan. 21	-	*	*	1	-	-	-	-	-	-	-	-	*	*	*	1
	Jan. 28	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
Kingstown Urban District	Jan. 7	-	*	*	-	-	-	-	-	-	1	-	-	*	*	*	1
	Jan. 14	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	Jan. 21	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	Jan. 28	-	*	*	-	-	-	-	-	-	-	-	-	2	*	*	2
City of Belfast	Jan. 7	3	*	*	17	-	-	5	5	7	4	11	-	*	*	*	52
	Jan. 14	6	*	*	7	-	-	2	-	5	12	9	-	*	*	*	41
	Jan. 21	2	*	*	9	-	-	3	-	6	5	4	-	*	*	*	29
	Jan. 28	-	*	*	22	-	-	5	-	5	4	6	-	*	*	*	42

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

Twelve cases of measles were admitted to hospital during the week ended Saturday, January 28, 1905, 23 were discharged, there were 6 deaths, and 57 patients remained under treatment at its close.

Nine cases of scarlet fever were admitted to hospital, 9 were discharged, there was one death, and 55 cases remained under treatment at the close of the week. This number does not include 13 convalescents from scarlatina who remained under treatment at Beneavin, the Convalescent Home of Cork Street Fever Hospital, Dublin.

One case of typhus fever remained under treatment at the close of the week.

Six cases of diphtheria were admitted to hospital, 6 were discharged, and 21 cases remained under treatment at the close of the week.

Eight cases of enteric fever were admitted to hospital, 9 were discharged, and 50 cases remained under treatment in hospital at the close of the week.

In addition to the above-named diseases, 8 cases of pneumonia were admitted to hospital, 8 patients were discharged, and 19 cases remained under treatment at the end of the week.

ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, January 28, in 76 large English towns, including London (in which the rate was 18.9), was equal to an average annual death-rate of 18.4 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 20.3 per 1,000, the rate for Glasgow being 19.9, and that for Edinburgh 21.2.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ *N., Long.* 6° 15′ *W., for the Month of January,* 1905.

Mean Height of Barometer,	30.182 inches.
Maximal Height of Barometer (28th, 9 p.m.),	30.999 „
Minimal Height of Barometer (16th, 9 p.m.),	28.779 „
Mean Dry-bulb Temperature,	42.6°.
Mean Wet-bulb Temperature,	40.5°.
Mean Dew-point Temperature,	38.0°.
Mean Elastic Force (Tension) of Aqueous Vapour	.231 inch.
Mean Humidity,	84.1 per cent.
Highest Temperature in Shade (on 6th and 8th),	53.9°.
Lowest Temperature in Shade (on 26th),	29.9°.
Lowest Temperature on Grass (Radiation) (26th)	25.2°.
Mean Amount of Cloud,	62.3 per cent.
Rainfall (on 14 days)	1.897 inches.
Greatest Daily Rainfall (on 16th)	.589 inch.
General Directions of Wind,	W., S.W., S.S.E.

Remarks.

An open, rather cloudy, month, with very little frost in Ireland—often dull, with a heavy downpour of cold rain and sleet in parts of the Dublin district on the 15th and 16th. The month was remarkable for the number of anticyclones which appeared from time to time over Central and Eastern Europe, and for the frequency of atmospheric depressions in the extreme N.W. and N. The most energetic depression of the month was that which passed slowly in a north-easterly direction along the west Coast of Ireland between the 15th and 17th. In it the barometer fell to the low level of 27.99 inches at Blacksod Point, Co. Mayo. This reading is thrown into bold relief by the fact that on the 28th the barometer reached or slightly exceeded 31 inches all over the Southern half of Ireland. Roche's Point, Cork Harbour, reported 31.03 inches both morning and evening on the 28th. At St. Mary's, Scilly Isles, the reading at 6 p.m. of the day named was 31.06 inches. This was the highest pressure recorded in the British Islands since January 31, 1902, on which day the barometer rose to 30.118 (30.12) inches at Aberdeen. It is noteworthy that coincidently with the high pressure of the 28th observed in Ireland, England, and the West of France, the barometer was down to 28.99 inches at Bodö, in the North-west of Norway. While the weather was mild in Ireland, and Scotland also, periods of severe cold were experienced in Central and South-eastern England, in which districts dense fogs were common.

The duration of bright sunshine was estimated at 57.75 hours, the daily average being 1.86 hours. The corresponding values for January, 1901, were 64 hours and 2.1 hours; 1902, 54 hours and 1.7 hours; 1903, 56.5 hours and 1.8 hours; and 1904, 49.75 hours and 1.6 hours.

In Dublin the arithmetical mean temperature (43.5°) was above the average (41.6°) by nearly 2 degrees; the mean dry-bulb readings at 9 a.m. and 9 p.m. were 42.6°. In the forty years ending with 1904, January was coldest in 1881 (M. T. = 33.2°), and warmest in 1898 (M. T. = 47.8°). In 1902 the M. T. was 43.0°; in 1903 it was 42.1°; and in 1904, 42.6°.

The mean height of the barometer was 30.182 inches, or 0.308 inch above the corrected average value for January—namely, 29.874 inches. The mercury rose to 30.999 inches at 9 p.m. of the 28th, having fallen to 28.779 inches at 9 p.m. of the 16th. The observed range of atmospheric pressure was, therefore, 2.220 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 42.6°, or 0.7°

above the value for January, 1904. Using the formula, *Mean Temp.* = *Min.* + (*Max.*— *Min.* × .52), the M.T. becomes 43.6. compared with a thirty years' (1871-1900) average of 41.7°. The arithmetical mean of the maximal and minimal readings was 43.5°, compared with a thirty years' average of 41.6°. On the 6th the thermometer in the screen rose to 53.9°—wind, W.; this reading was repeated on the 8th, wind, S.W. On the 26th the temperature fell to 29.9°—wind, W. The minimum on the grass was 25.5°, also on the 26th.

The rainfall was 1.897 inches, distributed over 14 days. Of this amount .589 inch fell on the 16th. The average rainfall for January in the thirty-five years, 1866-1900, inclusive, was 2.230 inches, and the average number of rainy days was 18. The rainfall, therefore, and rainy days were below the average. The record rainfall for January was in 1895—namely, 5.711 inches on 24 days. In 1876, only .406 inch was measured on but 9 days. In 1903, 3.269 inches fell on 20 days; in 1904, 2.535 inches on 19 days.

The atmosphere was foggy on the 1st, 13th, 18th, 22nd, 24th, 25th and 26th. High winds were noted on 14 days, reaching the force of a gale on 8 days—the 6th, 8th, 11th, 14th, 15th, 16th, 17th and 30th. Snow or sleet fell on the 9th, 15th, and 16th; hail on the 15th and 16th. Lunar halos were seen on the 17th and 18th. Temperature exceeded 50° in the screen on 8 days; while it fell to 32° in the screen on only 2 nights, compared with 3 nights in 1904, 7 nights in 1903 and 1902, 3 in 1901, 2 in 1900. 4 in 1899, only 1 night in 1898, 13 nights in 1897, only 3 in 1896, but 18 in 1895. The minima on the grass were 32° or less on 9 nights, compared with 11 nights in 1904, 9 in 1903, 12 in 1902, 11 in 1901, 13 in 1900, 16 in 1899, only 3 in 1898, 21 in 1897, 8 in 1896, and 29 in 1895.

In Dublin the rainfall up to January 31st, 1905, amounted to 1.897 inches on 14 days, compared with 2.535 inches on 19 days in 1904, 3.269 inches on 20 days in 1903, 1.614 inches on 12 days in 1902, 2.672 inches on 17 days in 1901, 2.579 inches on 27 days in 1900, 2.483 inches on 24 days in 1899, 1.786 inches on 14 days in 1898, 2.694 inches on 17 days in 1897, only .720 inch on 14 days in 1896, and with a thirty-five years' average (1866–1900) of 2.230 inches on 18 days.

At the Normal Climatological Station in Trinity College, Dublin, the observer, Mr. Maurice S. Moore, reports that the mean height of the barometer was 30.184 inches, the range of atmospheric pressure being from 28.778 inches at 9 p.m. of the 16th to 31.007 inches at 9 p.m. of the 28th. The mean value of the readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 43.2°. The arithmetical mean of the daily maximal and minimal temperatures was 43.8°. The screened thermometers rose to 53.9° on the 6th, and fell to 30.0° on the 26th. On the 18th the grass minimum was 22.0°, while on the 26th it was 22.8°. On the 29th the black bulb *in vacuo* rose to 80.7°. Rain fell on 14 days to the amount of 1.744 inches, the greatest fall in 24 hours being .510 inch on the 16th. The duration of bright sunshine, according to the Campbell-Stokes recorder, was 39.5 hours, of which 4.7 hours occurred on the 12th, 18th, and 28th, respectively. The mean daily sunshine was 1.3 hours. The mean temperature of the soil at a depth of one foot was 41.9° at 9 a.m.; at a depth of 4 feet, it was 44.7° at 9 a.m.

The rainfall at Leeson Park, Dublin, is given by Dr. C. Joynt, F.R.C.P.I., as 2.020 inches on 14 days, .510 inch having been measured on the 15th, and .625 inch on the 16th. In 1904, 21.910 inches of rain fell at Dr. Joynt's station.

Mr. Robert O'B. Furlong, C.B., reports that at Cloneevin, Killiney, Co. Dublin, the rainfall was 2.29 inches on 12 days, .70 inch being measured on the 15th. The average fall in January for the 20 years, 1885–1904, was 2.34 inches on 17.2 days. In 1896 the rainfall was .70 inch on 9 days; in 1897, 3.08 inches on 20 days; in 1898, 1.58 inches on 13 days; in 1899, 2.93 inches on 22 days; in 1900, 2.82 inches on 25 days; in 1901, 2.83 inches on 15 days; in 1902, 1.62 inches on 12 days; in 1903, 2.82 inches on 21 days; and in 1904, 2.42 inches on 17 days. Sleet or hail fell on the 15th and 16th, when there was a S. E. gale.

At Knockdolian, Greystones, Co. Wicklow, the rainfall measured by Mr. R. Cathcart Dobbs, J.P., amounted to 1.005 inches on 11 days, compared with 2.735 inches on 17 days in 1904; 3.300 inches on 15 days in 1903; 1.860 inches on 9 days in 1902; 4.035 inches on 16 days in 1901; 3.766 inches on 24 days in 1900; 4.395 inches on 24 days in 1899; 2.345 inches on 13 days in 1898; 3.660 inches on 20 days in 1897; and only .485 inch on 7 days in 1896. The heaviest fall in 24 hours was .350 inch on the 15th.

Dr. B. H. Steede writes that at the Royal National Hospital for

Consumption, Newcastle, Co. Wicklow, rain fell to the amount of 1.327 inches on 11 days, the maximal fall in 24 hours being .495 inch on the 15th. The shade thermometers rose to 52.5° on the 7th, and fell to 32.0° on the 18th and 19th. In January, 1899, the rainfall at this Second Order Station, was 4.760 inches on 23 days; in 1900, 3.810 inches on 28 days; in 1901, 3.541 inches on 14 days; in 1902, 1.666 inches on 12 days; in 1903, 4.320 inches on 19 days; and in 1904, 3.310 inches on 18 days.

Dr. Arthur S. Goff reports that at Lynton, Dundrum, Co. Dublin, the rainfall was 2.38 inches on 16 days, .81 inch being measured on the 16th. The corresponding figures for 1902 were 2.28 inches on 14 days, for 1903, 3.88 inches on 19 days, and for 1904, 3.59 inches on 25 days. The mean shade temperature was 43.0°, compared with 40.6° in 1902, 41.9° in 1903, and 42.4° in 1904, the extreme readings being—highest, 52°, on the 5th, 6th, and 8th; lowest, 31°, on the 26th

The rainfall at the Green, Malahide, Co Dublin, is returned by Mr. T. Bateman as 1.343 inches on 16 days The mean temperature in the shade was 40.5°, the extremes being—highest, 52°; lowest, 27°.

At White Cross, Stillorgan, Co. Dublin, 2.378 inches of rain fell on 11 days, .960 inch being measured on the 16th and .590 inch on the 15th.

In Cork the rainfall was, according to Mr. W. Miller, 3.46 inches on 18 days, an amount which was 0.54 inch below the average. In 1903, 8.07 inches of rain fell on 26 days, and in 1904, 5.30 inches on 26 days. On the 28th the barometer rose to 31.04 inches. This was the fifth time since 1750 that atmospheric pressure reached 31 inches in Cork. The dates were—December 25, 1778; January 9, 1825; January 18, 1882; January 9, 1896; and January 28, 1905.

At the Railway Hotel, Recess, Connemara, Co. Galway, the rainfall was 5.832 inches on 21 days, the maximal fall in 24 hours being .850 inch on the 5th. The observer, Mr. A. A. Smith, remarks that January, 1905, was an extremely wet month, with frequent heavy gales from S.W.

Dr. J. Byrne Power, F.R. Met. Soc., Medical Superintendent Officer of Health, Kingstown, reports that the mean temperature at that health resort was 44.2°, being 0.1° above the average for January during the previous 7 years, the extremes being—highest, 54.2° on the 8th; lowest, 29.5° on the 17th. At Bournemouth the mean was 40.3°, the extremes being—highest, 54° on the 8th; lowest, 26° on the 27th. The mean daily range of temperature was 7.9°; at Bournemouth it was 10.3°. The mean temperature of the sea at Sandycove bathing-place was 43.7°, being 1.1° below the average for the month during the previous 7 years. The mean relative humidity at 9 a.m. was 82 per cent., being the average for the month during the previous 4 years. The rainfall at Kingstown was 1.62 inches on 11 days; at Bournemouth it was 0.95 inch on 10 days. The total duration of bright sunshine was 62.1 hours, being 8.8 hours above the average for the month during the previous 4 years. It was 57.9 hours at the Ordnance Survey Office, Phœnix Park, 17.7 hours at Valentia, 40.0 hours at Parsonstown, and 41.9 hours at Southport. The reading of the barometer (corrected) at 9 p.m. on the 28th was 31.017, the highest on record at Kingstown during the previous 19 years, as appears by the record of the barograph.

INTERNATIONAL SOCIETY OF TUBERCULOSIS.

A new scientific Society has just been founded in Paris under the name of the "Société Internationale de la Tuberculose." Its office is in Paris. Meetings are held monthly, on notice from the General Secretary. The scope of this Association is the study of all questions concerning tuberculosis and the centralisation of means of defence. A record of its work will be published. The Association is composed of medical men or scientists holding diplomas from French or Foreign Universities and Colleges. Admission may be obtained by application to the President, which application must be accepted by a Committee elected at a general meeting. The annual subscription is 10 francs (9 shillings). For further particulars and for forms of application address M. le Docteur Georges Petit, General Secretary, 51 Rue du Rocher, Paris, France.

PERISCOPE.

THE RÖNTGEN CONGRESS IN BERLIN, APRIL 30 TO MAY 3, 1905.

THE Berlin Röntgen Society (Röntgen Vereinigung zu Berlin, E.V.) has arranged for a Congress in commemoration of the first decennial of Röntgen's discovery. The Congress will be held under the auspices of his Excellenz von Bergmann, "Ehrenpräsident." and of an Honorary Committee headed by the Prussian Minister of Instruction and His Majesty's Physician, the Surgeon-General of the Prussian Army, and including the President of the III. Congress d'Électrologie et de Radiologie. Those in Germany, and also in other lands, who are interested on the investigation, technique and employment of the Röntgen ray are invited to take part in the Congress, which will be held, as well as an Exhibition of Apparatus, Radiograms, &c., in the rooms of the "Ressource," in the Latin quarter of Berlin (N. 24, Oranienburgerstrasse 18) during the four days succeeding Easter week. The Executive Committee ("Organisations Ausschuss") of the Congress and Exhibition is composed of Herr Prof. Dr. Eberlein, Berlin, N.W. 6 "Vorsitzender"; Herr Dr. Immelmann, Berlin, W., Lützowstrasse 72, Secretary; and Herr Dr. Cowl, Berlin, W. 30, Treasurer—who will receive and acknowledge notifications of membership, contributions to the proceedings and other communications concerning the Congress and Exhibition—the last named, such as are in English. Cards of Membership will be issued on and after April 27th, 1905, at the Bureau of the Congress. The cost of the same, entitling also to the volume of proceedings, is 15 Marks or 15 British Shillings, or $3.60, which may be sent in advance to the Treasurer. Early notice of participation, with precise address, title of paper, &c., is desirable. It may be found necessary to restrict the time devoted to each communication, discussion or demonstration. An explicit circular concerning the Exhibition, which is to be devoted to new and interesting articles pertaining to the Röntgen ray, will be gladly sent on early application. Speakers in English, who may send in a short digest of their remarks before the Congress, will obtain, as far as is possible, a rendering of their remarks in German at their close.

ROYAL ARMY MEDICAL CORPS.

THE Director-General of the Army Medical Service has forwarded the following list of gentlemen who were successful at the examination held in London in January, 1905, for Commissions in the Royal Army Medical Corps, and for which 68 candidates entered :—

MARKS.	NAMES AND QUALIFICATIONS.
669	Charles Pinkerton Thomson, M.D., Ch.B. (Glasgow).
590	George Wykeham Heron, M.R.C.S. (Eng.), L.R.C.P. (Lond.).
565	Robert John Bertram Buchanan, L.R.C.P. & S. (Ireland).
563	George Brooke Forbes Churchill, M.R.C.S. (Eng.). L.R.C.P. (Lond.).
555	William Steward Nealor, M.R.C.S. (Eng.), L.R.C.P. (Lond.).
539	James Edward Hoar, M.R.C.S. (Eng.), L.R.C.P. (Lond.).
538	Richard Graves Meredith, L.A.H. (Dubl.), M.B., R.U.I.
538	Frederick Emilius Roberts, M.R.C.S. (Eng.), L.R.C.P. (Lond.).
531	George Smith Wallace, M.B., Ch.B. (Glasgow), D.P.H. (Lond.).
517	Wilfred Parsons, M.R.C.S. (Eng.), L.R.C.P. (Lond.).
514	Arthur Anderson M'Neight, M.B., B.Ch., B.A.O. (Dubl.).
513	Ernest Brabazon Booth, M.D., B.Ch. (Dubl.), B.A. (Dubl.).
512	Thomas Holroyd Gibbon, M.D., B.Ch. (Dubl.).
509	Richard James Campbell Thompson, M.R.C.S. (Eng.). L.R.C.P. (Lond.).
504	Ernest George Robert Lithgow, M.R.C.S. (Eng.), L.R.C.P. (Lond.).
502	Pierce Power, M.B., B.Ch., B.A.O., R.U.I.
496	Charles William O'Brien, M.R.C.S. (Eng.), L.R.C.P. (Lond.).
495	Ryder Percival Nash, L.R.C.P. & S. (Edin.), L.F.P. & S. (Glasgow).
491	James Sydney Pascoe, M.R.C.S. (Eng.), L.R.C.P. (Lond.).
490	Cecil Dacre More Holbrooke, M.R.C.S. (Eng.), L.R.C.P. (Lond.).
487	John Maurice Bisdie Rahilly, M.B., B.S. (Lond.), M.R.C.S. (Eng.), L.R.C.P. (Lond.).
487	George Grant Tabuteau, L.R.C.P. & S. (Ireland).
484	Richard Edmond Humphrey, L.R.C.P. & S. (Ireland).
483	William George Maydon, M.B., Ch.B. (Aberdeen).
479	Garfield Ormrod, M.B., Ch.B. (Edin.).

ANGINA PECTORIS.

In a highly-finished communication to ***American Medicine*** of October 29, 1904, Dr. John Knott, of Dublin, gives a most interesting *résumé* of the literature of this subject. This disease or group of symptoms is English above all things—one of luxurious living and full feeding rather than of the contrary condition. It occurs preferably in subjects with a tendency to fatty deposition. As to the internal conditions, which determine the external expression of the symptoms known as angina pectoris, the writer thinks that the most important evidence of any has been furnished by Lancereaux and Peter, who in several cases have reported the existence of distinct evidence of neuritis in the nerves of the cardiac plexus. This would account for the pain and the irritative reflex inhibition, which would be a very possible consequence of the involvement of the branches of the pneumogastric nerve involved in that plexus, and would offer an efficient cause of the sudden death which so often marks the period of this painful affection. The writer points out a considerable similarity between the paroxysms of angina and the painful cramps of alcoholic neuritis. He thinks that the variable amount of radiation of pain may be due simply to the varying extent to which this neuritis has extended to other filaments of the vaso-motor nerves. He asks if this vaso-motor neuritis may not be more intimately associated with the distribution of atheroma than pathology has yet pointed out. This affection occurs far oftener in males than in females. It is most common after the fiftieth year of life. As has been noted, the majority of these patients belong to the Anglo-Saxon race. The "intellectual and anxious" are specially prone to its invasion. The temper of the sufferer is often a rather characteristic feature of the origin and progress of angina. As to the treatment of this affection, the writer states that the application of the amyl nitrite to the relief of the paroxysms of angina pectoris is a boon which has been conferred upon suffering humanity by Sir Lauder Brunton, an achievement which by itself is worthy of winning for him the high reputation which he enjoys. The writer has personally been disappointed in the results of the employment of nitro-glycerine.—*Medical Record*, New York, Nov. 5, 1904.

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APRIL 1, 1905.

PART I.
ORIGINAL COMMUNICATIONS.

ART. XII.—*Professor D. Mendeléeff's Chemical Conception of the Ether.*[a] By WALTER G. SMITH, M.D., F.R.C.P.I.; Physician in Ordinary to His Excellency the Lord Lieutenant of Ireland.[b]

I.—CHEMICAL CLASSIFICATION.

IN order to lead up clearly to Mendeléeff's conception as to the possible nature of the ether, it will be convenient, in the first place, to briefly refer to the modern mode of classification of the elements, and then to present some details of the discovery of the newly-found inert gases of the atmosphere.

Certain groups of elements present an obvious similarity in their properties, and it was long ago observed that remarkable numerical relations exist among their atomic weights, which are plainly not due to mere chance, and which are manifestly correlated to the physical and chemical properties of the elements.

One need only refer to such triads as chlorine (35.5), bromine (80), and iodine (127); or lithium (7), sodium

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[a] "An Attempt towards a Chemical Conception of the Ether." By Professor Mendeléeff. Translated from the Russian by G. Kamensky. 1904.

[b] A Communication made to the Dublin Biological Club on Tuesday, January 17, 1905.

(23), and potassium (39), &c. In each of these groups the atomic weight of the middle term is the arithmetic mean of the other two.

Forty years ago Newlands went a step further and pointed out that if the elements, as known in his time, were tabulated (omitting hydrogen) in the order of increasing atomic weights, the properties belonging to each of the first seven elements reappeared in the second seven.

Or, in other words, the eighth element, starting from a given one, is a kind of repetition of the first, like the eighth note of an octave in music. Hence, this interesting and notable relationship was named the "law of octaves." Thus, consider the series:—

Li	Be	B	C	N	O	F
7	9	11	12	14	16	19
Na	Mg	Al	Si	P	S	Cl
23	24	27	28	31	32	35.5

Each period begins with an alkali metal and ends with a halogen. Closely allied elements fall into vertical rows.

This fruitful suggestion was elaborated and developed by a German chemist—Lothar Meyer—and especially by a Russian chemist—D. Mendeléeff.

Since the promulgation in 1869 of Mendeléeff's classification the discovery of the five new inert gases of the atmosphere, starting from helium (at. wt. = 4) has introduced a group which takes precedence of those already recognised.

Accordingly, in order to avoid disturbing the numeration of Group I. of Newland's octaves, which started, as we have seen, from lithium (at. wt. = 7) the new group is termed the zero group, an appropriate designation in view of its chemical inactivity. We have now, therefore, to recognise a recurrence of similar properties in nones instead of octaves.

So the series will run thus, starting from hydrogen:—

Hydrogen	Helium	Li	Be	B	C	N	O
1	**4**	**7**	**9**	**11**	**12**	**14**	**16**
Fluorine	Neon	Na	Mg	Al	Si	P	S
19	20	23	24	27	28	31	32

Chlorine	Argon	K
35.5	40	39
Bromine	Krypton	
80	82	
Iodine	Xenon	
127	128	

The helium group of inert gases separates the active halogen elements from the equally active elements of the alkali group.

A "period" comprises the number of elements, taken in order of increasing atomic weights, which are passed over until an element is met with which corresponds in properties with the initial element selected.

The minimum number of elements in a "period" is 8, but may be more—as many as 18. So we get "short periods" and "long periods."

This periodic reappearance of similar properties which is exhibited by the elements and their compounds as the atomic weights gradually increase is expressed in Mendeléeff's law, viz.:—

The properties of the elements, as well as the properties of their compounds, form a periodic function of the atomic weights of the elements.[a]

This periodic classification has, to a great extent, replaced the system of classification founded upon valency, which is a changeable and uncertain property, and does not even exist in the argon group of elements. Indeed the periodic system practically absorbs and includes the older method of grouping, and is being adopted into many recent text-books of chemistry as the most rational way of classifying the elements. It must, however, be allowed that the periodic law, although eminently suggestive, presents many difficulties, and is not yet fully understood.

II.—THE ATMOSPHERE AND THE INERT GASES.

Atmospheric air has been for many centuries a fruitful field for speculation and conjecture. To tell the full story of its nature is in great part to write a history of chemistry and physics (Ramsay).

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[a] A "function" is a quantity whose value depends upon that of the variable to which it is related. The variable in this case is atomic weight.

Up to ten years ago it was universally believed that the composition of the air was thoroughly understood and that all its constituents were known.

Roughly, its average composition would have been stated as—oxygen 20 per cent., nitrogen 79 per cent., aqueous vapour, CO_2, and traces of NH_3, HNO_3, etc.

Contrast this with the modern analysis of air which starts from the brilliant discovery of argon in 1894 by Rayleigh and Ramsay, one which opened up an entirely new field of investigation.

ANALYSIS OF AIR.

	Vols. per 1,000	B.P.	M.P.	
Nitrogen ..	769.5000	— 195.5	— 213	Colourless liquid
Oxygen ..	206.5940	— 182.5	— 223	Pale blue liquid
Aqueous Vapour ..	14.0000	—	—	—
Argon ..	9.3700	— 186.1	— 187.9	Colourless liquid
Helium : Neon Krypton : Xenon	0.012	—	—	Colourless liquids Argon and Neon form white solids
Carbon dioxide ..	0.3360	— 80	—	White solid
Hydrogen ..	0.1900	— 253	— 257	When liquid air evaporates, the first and most volatile part is rich in H The presence of H in sensible quantities as a constituent of normal air has been only recently recognised
Ammonia ..	0.0080	— 38.5	— 75.5	—
Nitric Acid ..	0.0005	—	—	—
Ozone ..	0.0015	— 119°	—	? = $H_2\,O_2$ Tests for Ozone are crude Liquefied Ozone is deep blue Gaseous Ozone has blue tint

There is reason to believe that formaldehyde occurs in the atmosphere.

ARGON GROUP—PROPORTION IN AIR.

	Parts per 1,000	
Argon	9.37	= 1 per cent.
Neon	0.01	= 1 in 100,000
Helium	0.001	= 1 in 1,000,000
Krypton	0.001	
Xenon	0.00005	= 1 in 20,000,000

Argon and helium have been extracted by heat from the mineral—Malacone (a variety of Zircon)—and Argon has been found in one sample of meteoric iron.

There is a far larger proportion of Neon in the gas from the Bath waters than in the atmosphere (Dewar).

In addition to these novel elements we have further to recognise that the atmosphere includes radio-active gaseous emanations (Elster and Geitel), probably derived from radium "emanation," diffusing out from the soil. Every falling rain-drop and snow-flake carries some of this radio-active matter to the earth, while every leaf and blade of grass is covered with an invisible film of radio-active material. The gaseous emanation is gradually transformed into a non-volatile kind of matter.

The amount of radio-active matter in the earth is probably sufficient to heat it to an appreciable extent, and so tends to maintain the present internal heat of the earth.

The older methods of determining the composition of the atmosphere were necessarily of a *chemical* nature, because the difference in the physical properties of its familiar constituents is not sufficiently marked to allow of these properties being utilised for purposes of separation.

But the new group of gases found in the air form no chemical compounds—*i.e.*, there is at present no *chemistry* of these strange substances.

How, then, are they isolated?

We must, it is plain, have recourse to physical methods.

The procedure essentially depends upon utilising the difference in their boiling points when they are liquefied by cold and pressure.

Now as these boiling points are extremely low down in the scale, we have to call in the aid of powerful refrigerating apparatus, and liquid air, fortunately, comes to our help.

These new inert gases are all colourless, odourless, and tasteless, and are only sparingly soluble in water.

Their preparation involves two stages:—

(*a*) Separation of other constituents of the air from them by *chemical* methods.

(*b*) Separation of the members of the group from each other by *physical* means.

In the first stage the air is passed successively through (I.) solution of caustic soda and quicklime (absorbs CO_2 and other acids); (II.) through H_2SO_4 (absorbs H_2O); (III.) over red-hot Cu (combines with the oxygen); (IV.) over red-hot Mg; and finally over red-hot pure Ca. These metals fix all the nitrogen as nitrides of Mg and Ca.

$$4\,Mg + 3N_2 = 2\,Mg_3\,N_2.$$

Nothing is left now but the inert gases. To separate these from each other compress the mixed gases into a bulb. Cool to – 185° by liquid air.

The product is a liquid, which contains:—

(*a*) Liquefied gases, - - - A. Kr. X.

(*b*) Gases dissolved in the liquid, - Ne. He.

We next call in the aid of fractional evaporation. Remove the bulb from the liquid air. Its temperature begins to rise. Then the **He** and **Ne** escape first, mixed with a large amount of **A**. The rest of the **A** distils next and **Kr** and **X** remain till the last. Repeat the fractionating process so long as necessary.

In order to separate a mixture of **He** and **Ne** we have to invoke the intense cold obtainable by liquid hydrogen.

By its aid, if a mixture of **Ne** and **He** is cooled to – 240°, **Ne** freezes, and **He** remains gaseous and can be pumped off. Then warm the **Ne** and pump it off. Helium enjoys the distinction of being the only gas which has yet resisted liquefaction. If its liquefaction should ever be achieved it is anticipated that by means of the liquid we could probably reach a temperature only 5° above absolute zero.

Helium is obtainable from certain minerals—*e.g.*, pitchblende and clèveite, and Mr. R. Moss considers he has shown that the **He** is occluded in minute cavities in pitchblende.

But Dr. Morris Travers, an authority of weight, does not agree with this view. He thinks that we are now justified in assuming that **He** is a decomposition product of radio-active change, and is present in the mineral in a state of supersaturated solid solution. Upon heating the mineral the **He** is dissociated, and is liberated with a velocity which increases with the temperature.

Grinding the mineral even to an impalpable powder, as in Mr. Moss's experiments, if unaccompanied by local heating, should result in the evolution of minute quantities of He only. (*Nature*, Jan. 12, 1905.)

Helium cannot be induced to recombine with the original mineral when it has once been driven off by heat.

III—THE ETHER.

Let me, by way of premise, quote Johnstone Stoney's neat definition of a theory and of a hypothesis:—

(*a*) A *theory* is a supposition which we hope to be true.

(*b*) A *hypothesis* is a supposition which we expect to be useful.

The wave-theory of light postulates the hypothesis of a medium in which these waves are propagated through space.

Very various views have been held as to the nature of this medium. What is its ultimate constitution? Is it molecular or continuous?

Yet, "whatever difficulties we may have in forming a consistent idea of the constitution of the ether, there can be no doubt (says Clerk Maxwell) that the interplanetary and interstellar spaces are not empty, but are occupied by a material substance or body which is certainly the largest and probably the most uniform body of which we have any knowledge."

Were the ether an absolutely *perfect* fluid the velocity of light should be infinite. But its known velocity of about 186,000 miles per second seems to be limited by the constitution of the ether in the same way that sound is limited in velocity by the constitution of the earth's atmosphere, or of other conducting substance through which it has to pass (Gore).

Professor de V. Wood calculates that a quantity of the ether whose volume equals that of the earth would weigh about 1-20th of a pound—*i.e.*, about 4-5ths of an ounce. The pressure would be about 1 lb. on a square mile.

He regards the ether as a very attenuated gas which would offer only an insensible resistance to the motion of planets and comets.

Maxwell's theory that light is due to electrical vibrations to and fro in the ether, and Hertz's magnificent experimental demonstration of it may justly be called the greatest discovery of the nineteenth century. The length of the light-waves is about $\frac{1}{40000}$ of an inch; the length of the electrical waves of wireless telegraphy is many yards. The problem of light will only be solved when we have discovered the mechanical properties of the ether. We are still in ignorance on fundamental matters concerning the origin of electric and magnetic strains and stresses (Schuster, Theory of Optics, 1904).

It follows from Maxwell's theory that the combined effect of the electric stresses in the ether is a momentum or pressure in the direction of propagation of the wave. This pressure would tend to push a body which absorbed the light in the direction the light is travelling.

This almost infinitesimal ethereal pressure has been detected and measured by Lebedew, and his beautiful experiments have been confirmed and extended by Nichols and Hull.

Lebedew's experiments were made with a modified form of Crookes' radiometer. He has shown that the pressure is directly proportional to the energy of the incident light, and is independent of the colour.

The exquisite delicacy and difficulty of the experiments may be gauged by the statement that when bright sunlight falls on a reflecting surface the pressure to be detected amounts to less than a milligramme per square metre.

A highly interesting application of this discovery is the explanation it affords of a long-standing puzzle, viz.:—Why do the tails of comets point away from the sun in the perihelion passage? Comets are not altogether bodies incandescent through heat, but rather glowing by electricity. This is compatible, under certain circumstances, with a relatively low temperature. Now, the energy of the push or pull produced by electricity depends (other things being equal) upon the *surface* of the body acted upon—that of gravity upon its *mass*. The efficacy of solar electrical repulsion relatively to solar gravitational attraction grows, consequently, as the size of the particles diminishes. Make this small enough—*e.g.*, the tenuous matter of the comet's tail—and the particles will virtually cease to gravitate, and will unconditionally obey the impulse to recession. Hence, the direction of the tails of comets, admitting that the sun and they are similarly electrified. (*Astrophysics*, A. M. Clerke.)

MENDELÉEFF'S CHEMICAL CONCEPTION OF THE ETHER.

I shall now attempt to give some account of the speculations of the veteran Russian chemist, Mendeléeff, as to the nature of the ether.

The capacity of the ether to penetrate all substances may be regarded as the ideal of the diffusion of gases through metals or other diaphragms.

Hydrogen, which has a small atomic weight, and is the lightest of all known gases, not only diffuses more rapidly than any other gas, but also has the faculty of penetrating through walls of such metals as Pt and Pd, which are impervious to other gases. If, as we assume, the ether has the faculty of permeating all substances, it must be even lighter and more elastic (greater *vis viva*) than H, and, what is more important, must have a less capacity to form chemical compounds with the bodies which it permeates.

Now, the recent discoveries of the five inert gases have familiarised us with the notion of elements which as yet have furnished no definite compounds, although they clearly evince the faculty of solution in water—*i.e.*, of forming indefinite easily dissociated compounds.

Mendeléeff puts forward the conception that the ether may possibly be an elementary gas, like **He** or **A**, incapable of chemical combination.

Guided by his periodic system Mendeléeff, as is well known, was led thirty-five years ago to predict the existence of several then unknown elements, and to enumerate their physical and chemical properties in a free and combined state.

These elements—gallium, scandium, and germanium—were subsequently discovered, and this happy verification of Mendeléeff's prediction clinched the speedy recognition of the value of his system of classification.

Mendeléeff made these sagacious predictions by following the mathematical method of interpolation—*i.e.*, finding intermediate points by means of extreme points whose relative position is known.

He now ventures in a similar fashion, but with less confidence, to extrapolate—*i.e.*, to determine points beyond the limits of the known, or, to use a Hibernicism, to predict backwards.

Arguing from recognised relationships among the known elements in the periodic system, he looks for the discovery of two unknown elements having atomic weights less than that of H, and belonging to the argon group.

He designates these hypothetical elements as *y* and *x*, and their position in his system is indicated in this table.

Zero Group			Group I.			Group II., &c., &c.
x		*y*	Hydrogen	=	1	
Helium	=	4	Lithium	=	7	
Neon	=	20	Sodium	=	23	
Argon	=	39	Potassium	=	39	
Krypton	=	82	Rubidium	=	85	
Xenon	=	128	Cæsium	=	132	

He suggests that his hypothetical element *y* may perhaps be found in *coronium*, the name allotted to an unknown element, whose spectrum is clearly visible in the solar corona above (*i.e.*, further from the sun than) that of H.

Several observers think they have discovered traces of coronium in their observations on the spectra of volcanic gases.

Mendeléeff prophecies that the density of coronium referred to that of H should be less than 0.2.

Such an attenuated gas could not, in accordance with the views first promulgated by Johnstone Stoney, be retained in the earth's atmosphere, but might be found in the higher regions of that of the sun with its far greater mass.

But this density of 0.2 is far too high to fit in with the requirements of the ether. For the atoms of ether must be of another kind. They must be capable of overcoming even the sun's attraction, of freely permeating all space, and of penetrating everything and everywhere.

Hence, Mendeléeff assumes the possible existence of yet another element, x, which he proposes to identify with the ether.

In order to be able to penetrate throughout all space its density must be so small compared with that of H that its molecular motion would allow it to overcome the attraction not only of the earth and sun, but also of *all* the stars, as otherwise it would accumulate about the largest mass and not fill all space.

We need not speak of the imponderability of ether, but only of the impossibility of weighing it.

As to the size of stars, it is calculated that the mass of Sirius (inclusive of his satellites) is 3.24 times that of the sun, and, for aught we know, there may be stars whose mass is 50 times that of the sun.

Mendeléeff considers it not improbable that the particles and atoms of this excessively light element, x, which are capable of moving freely everywhere throughout the universe, have an atomic weight one millionth that of H, and he computes that they travel with a velocity of about 2,250 kilometres per second—*i.e.*, nearly the velocity of light.

In fine, Mendeléeff's conception of the ether is that it consists of a peculiar all-penetrating elementary gas.

He does not pretend to offer more than a tentative answer to the fascinating problem of the nature of the ether, and he pathetically refers to his age (70 years) as a reason why he is not content to pass away without publishing these thoughts, which, even if somewhat crude, may lead some one to a surer path than that vouchsafed to his vision, enfeebled by the weight of years.

To my thinking the most attractive feature of Mendeléeff's essay is not his ingenious attempt to reduce our conception of the ether to a tangible something, but rather the bold way in which, by logically following out the periodic law, he seeks to lift the veil that may perchance conceal unseen elements hidden behind and beyond the atom of H which has hitherto served as the starting point for atomic weights.

Against this hypothesis of Mendeléeff may be raised Clerk Maxwell's classical objection that the ether cannot be molecular, for, if it were, all the energy of the universe would be gradually transferred to it, and frittered away into the irregular agitations which we call *heat.*

It must also be noted that Mendeléeff is strictly conservative in his views, and rejects all the modern ideas as to the nature of radiation and electric action, and he cannot accept the notion of "electrons."

He is a firm believer in the immutability of the chemical atom, and refuses to admit the possibility of the transformation of one element into another.

Yet are we not coerced by recent investigations to believe in such transmutation?—and I will, in conclusion, refer to some beautiful experiments recently made by Ramsay, which seem to prove that helium gradually makes its appearance in radium bromide, which has stood for some time.

An aqueous solution of radium bromide placed in an exhausted bulb gives off a mixture of hydrogen and oxygen gases (derived from the water), together with a gaseous "emanation," which, when isolated, gave a spectrum resembling that of argon. In two days or so the astonishing observation was made that this spectrum faded away, and the spectrum of helium began to assert itself, and within a week the entire helium spectrum (nine lines) was observed. In short, the "emanation" had turned, partially at least, into helium. Similar results have been obtained by Dewar and Curie. From 50 mmgm. of radium bromide the volume of emanation procurable at any one time probably would not exceed that of a large pin's head.

Have we not here the first recorded instance of a transmutation of the elements, and can we doubt that we are on the threshold of fresh revelations?

The helium penetrates *into* the glass, and by heat it can be liberated from the glass. The beaker gradually becomes radio-active by bombardment with β-rays from the radium bromide.

Perhaps actinium is also produced. Certainly more than one substance is found. Ramsay considers it is fair to infer that *if* atoms of ordinary elements could be made to *absorb* energy they would undergo change of a constructive, and not of a disruptive, nature.

Radium is possibly the child of uranium, and helium, as we have seen, springs, Minerva-like, from radium. The presence, therefore, of helium in the sun is an indirect indication of the existence of radio-active matter in that luminary.

It seems probable that the substances which produced the inert gases, other than helium, no longer survive on the earth.

Art. XIII.—*Puerperal Convulsions.*[a] By R. J. Kinkead, M.D. Dubl.; Professor, Queen's College, Galway; Physician and Gynæcologist to the Galway Hospital.

In the communication I have the honour to lay before the Obstetric Section I do not propose to discuss at length the ætiology of eclampsia; the subject is obscure and our knowledge of it defective.

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[a] Read before the Obstetrical Section of the Royal Academy of Medicine in Ireland on Friday, February 3, 1905.

In a very recently published work on obstetrics[a] I find it stated:—

"During gestation the presence of albumen in the urine is due in a great measure to venous congestion of the kidneys, which results from the pressure of the gravid uterus. But, while passive congestion and hydronephrosis may be thus technically included under the term pregnancy kidney, there is an entirely different affection to which the designation is familiarly restricted, and which most certainly is not due to pressure, nor has it anything in common with ordinary nephritis, whether pre-existent or developed during gestation as a result of exposure or infection."

"For the present, therefore, we may regard pregnancy kidney as due to a toxæmia which is also capable, at times, of causing eclampsia as well."

"Thus we are still in doubt at the present time concerning the essential ætiology of eclampsia. Though all Bouchard's statements may be correct, the true nature of the poison has not been clearly demonstrated."

That we should still be in the dark is not, I think, surprising when we consider the complexity of the problem and the changes produced by pregnancy and parturition on the functions of the female. If we take account of facts, apart from theories, it seems to me that the wonder is not that eclampsia sometimes occurs, but that so many women escape.

I think it was Robert Barnes who described pregnancy as an experiment performed by nature for our information, which tests every organ of the body and searches out every weak spot. Woman is more emotional than man, her nervous system is more excitable; this normal condition is exaggerated by pregnancy, and she becomes more responsive to stimuli likely to produce reflex movements; digestive disturbances are usual, and thus there is a tendency to a lack of proper balance or equilibrium between the functional activity of parts of the nervous system and to errors of nutrition, whereby the nerve cells may become unstable and prone to undergo discharges of a morbid character.

[a] Edgar. Practice of Obstetrics.

Not only is there the development and awakening into action of special glands like the breasts, but every gland in the body is forced into greater activity to meet the demands of the uterus and fœtus and to contend with the increased metabolism from their growth.

As the chief eliminating glands, vastly increased work is performed by the kidneys. They are, however, handicapped by increased cardiac propulsive power, vascular tension, and more or less anæmia (a condition somewhat similar to what obtains in Bright's disease).

I do not agree with the statement that during gestation the presence of albumen in the urine is due in a great measure to venous congestion of the kidneys resulting from pressure of the gravid uterus, for not only may albumen be found in the urine from vaginal discharge, especially in that passed on getting out of bed, but it is present and convulsions occur when the uterus is too small to cause pressure. When, however, passive congestion arises from pressure it adds to the embarrassment of the already over-taxed kidneys.

The kidneys appear to be in a state of unstable equilibrium between a physiological and pathological condition: they may remain on the safe side or be forced over into the danger zone, and if they be already damaged by antecedent disease the greater the probability of their giving way.

Then there are apparently contradictory facts—a high degree of albumen in the urine and no convulsions—or convulsions and no albuminuria; in some cases terminating the pregnancy immediately relieves the kidneys and stops the convulsions, in others convulsions commence and albumen appears after the uterus has emptied itself.

"Certain toxic alkaloids, to which Gautier has given the name of leucomaïns, may be developed during life in the course of certain maladies," and, like ptomaïns produced in dead tissue, may be convulsive poisons.

If the dose discharged into the circulation be large enough convulsions shall occur even with physiologically acting kidneys.

Brouardel recounts the case of a druggist:—

"During his wedding night his young wife had an epileptic seizure; the attacks recurred. The husband analysed his wife's urine before, during, and after the attacks. When the attack was coming on the urine always contained an enormous quantity of ptomaïns or leucomaïns."[a]

If the toxin be gradually generated no symptoms may be produced if it be eliminated as rapidly as formed, the amount circulating in the blood not being sufficient to cause a nervous explosion; but if the kidneys have passed into a pathological condition, and their power of excretion is more or less defective, it may be sufficient to eliminate the toxin or it may not; in the latter case the poison accumulates in the circulation, and when an effective dose is attained convulsions supervene.

"A woman who sold poultry in the market, having a stuffed hen turkey that had not been sold, and which she feared would be spoilt, invited her friends and relatives to eat it with her. Twelve persons partook of that repast, and no one noticed any peculiar smell or flavour about the turkey. The woman herself, who had not eaten more than her guests, was taken ill in the night and died. Her guests also became ill, but none of them died.

"We found in the stuffing inside the turkey a product analogous to conicine, and we met with the same product in the viscera of the dead woman. I repeat that this woman had not eaten more of the turkey than the rest, but at the autopsy we discovered that the kidneys were diseased, and unable to eliminate the toxins."[b]

Labour involves powerful and often prolonged muscular exertion, much pain, large expenditure of nerve force, and active and passive congestion of the kidneys. Muscular exertion means combustion of tissues, consequent effete material to be eliminated, and, when prolonged, the production of toxic alkaloids during life as the result of over-work and exhaustion.

Kidneys just able to discharge their functions during pregnancy may be overburdened during labour, or become suddenly blocked after delivery, and this may have happened in the interesting case of *post-partum* eclampsia for which I am indebted to Dr. Costello of Dunmore.

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[a] Brouardel. Death and Sudden Death.

[b] Brouardel.

It appears to me, however, that the supposition of a toxin does not cover the whole ground, and that the individual factor must be taken into consideration. How far a neurotic temperament or unstable state of equilibrium in the nervous centres tends to the production of convulsions with or without kidney incapacity is an open question. It would be interesting to ascertain the relative frequency of eclampsia in peasant women, town dwellers, and in the educated and wealthier classes; *à priori*, we would expect environment and habits of life to have considerable influence, and that the cultivation of the emotional and nervous centres at the expense of physical development, tend to produce increased sensibility to pain and a condition of the nerve centres more responsive to stimuli.

So far as I have been able to inquire amongst some of my friends in dispensary practice in rural districts, I find convulsions reported to be very rare among peasant women.

The following cases are interesting as illustrating, what I may call the uncertain incidence of eclampsia, the marked effects produced by terminating the pregnancy, and the beneficial effect of chloral and chloroform.

In the first case the result of the death of the fœtus seems to indicate that its life is a factor in producing congestion of the kidney.

Case I.—Fourth Pregnancy. Ten years had elapsed since birth of her last child, following which she had a desperate attack of septicæmia, with acute nephritis and hæmaturia; ever since there had been some albumen in the urine, and occasionally casts. but the general health had been fairly good, and there was no evidence of progressing kidney disease. On pregnancy supervening the quantity of albumen increased, and casts became numerous and constant: at four and a half months vision became affected, headache, nausea, œdema and somnolence came on. I brought her to Dublin for consultation, and it was decided to endeavour, by diet and treatment, to tide her over to the seventh month, when, if labour was induced, there would be a likelihood of the child surviving. In a few days blood appeared in the urine: after a week or ten days of sharp hæmaturia—about 10 o'clock one night—alarming bleeding from the nose, necessitating plugging, set in, and next morning the child died. Prior to the death of the child the urine looked exactly like blood, and, on cooling, a large coagulum formed: from the death of the child there was a steady diminution of the quantity of blood, so that when labour set in—some 28 hours after—although the urine was red it was clear, and there was no coagulum; within twenty-four hours after the expulsion of the fœtus the urine appeared to be free from blood.

We rarely have so decisive a demonstration of the relief to the kidneys which follows the cessation of physiological activity. It cannot be attributed to the nasal hæmorrhage, for the urine passed from its cessation until after the death of the fœtus next day was as full of blood as before its occurrence.

Case II.—Was a primipara. As I knew that some fourteen years previously she had had a slight attack of nephritis, subsequent to scarlatina, I examined her urine every fortnight. Prior to pregnancy its sp. g. was 1020, and it was free from albumen and casts; shortly after, albumen appeared and although she was at once put on diet and under treatment the albumen increased in quantity, casts were found, later on there was œdema, then headache and defective vision. Labour was induced at the seventh month, the child survived and the mother recovered. In due course she became pregnant again, and although there was a moderate amount of albumen, she went to full time. In her third pregnancy, however, albumen appeared immediately, increased rapidly, and the symptoms became so urgent that I was forced to induce labour in the fourth month. Her fourth pregnancy was normal. On both occasions in which labour was induced the relief to the kidneys was immediate.

In neither of the cases can the albuminuria be attributed to pressure. In both the kidneys had been previously damaged. In the first relief came too late, the kidneys went from bad to worse, and the patient died a year afterwards from uræmia and convulsions. In the second although always delicate, the lady lived several years, and died from pulmonary tuberculosis.

Case III.—Second confinement. As in first pregnancy (she aborted in four and a half months) there had been some albumen in urine and slight œdema, when about a year after she became pregnant for the second time, I examined her urine every fortnight. There was a steady increase of albumen, but it was not excessive until a few hours before attack. At the beginning of the ninth month I was sent for as headache had come on suddenly; it was not very severe, there was no affection of vision, no vomiting or nausea, no increase of œdema, she said she was passing more water than usual. As there was constipation, I ordered her a purgative, and took away a specimen of urine for examination. I was called at 6 a.m. next morning, and on arrival found she had had a convulsion: two more fits occurred before I could get her under chloroform. I then passed a catheter into the uterus, and gave her an enema of mucilage of starch, with 30 grs. of chloral hydrate. Notwithstanding that she was kept under chloroform there were two slight fits in the next hour; she then got a second enema with 30 grs. of chloral, and she got two more in the course of the day, and was kept under the influence of chloroform until the child was born, at 6 p.m. After the second chloral enema there were no further seizures; there were occasional threatenings, but fits were averted by pushing the chloroform. The urine passed in the morning and that drawn off in the course of the day became almost solid on boiling and with nitric acid. After delivery the albumen rapidly disappeared, and the recovery was uneventful. She has since had three children, and although albumen was present it was trifling, and there was no cause of anxiety.

Case IV.—Second confinement, the first at 8 months, reported to have been normal. Convulsions came on suddenly late in the evening without any prodromata, except some headache for two days. Her husband, a medical man, informed me on my arrival, three hours after commencement of attack, that the fits recurred every twenty minutes; he had given a hypodermic of ½ gr. morphin. This was repeated; she was put under chloroform, urine drawn off, and a catheter passed into uterus. During an hour there were three convulsions, I then gave an enema of 30 grs. of chloral hydrate: during the next hour there were warnings of recurrence, which subsided on pushing the chloroform; a second chloral enema was given, and she was kept under chloroform until the birth of the child, at 6 a.m. After the second chloral enema there were no more fits. The urine drawn off became almost solid on heating, marked diminution of albumen followed delivery, and convalescence was uneventful. A couple of years after she again became pregnant, there was no albuminuria, and both pregnancy and delivery were normal.

CASE V.—This was also a second pregnancy, the first at full time was normal. Her health in the interval, five years, had been good, as it had also been during her pregnancy (which had arrived at the eighth month) until a couple of days previous to the attack, when, after coming in from boating, she was seized with a sharp pain in the back of her head and neck. The attack was ushered in suddenly by a single convulsion, I saw her an hour after, and she was then conscious and her mind quite clear: while talking to me a second convulsion came on, and the fits recurred rapidly until I got her under the influence of chloroform and chloral: I induced labour, and it was easy to stave off threatening recurrences by pushing the chloroform. After delivery rapid reduction of albumen; there was, however, much suffering for many days from pain in the back of the neck, and along the spine, and convalescence was slow.

CASE VI.—Also a second pregnancy, the first going to full time and being perfectly normal. She had a history of chronic dyspepsia from girlhood; diet mostly farinaceous, seldom eating meat; of a nervous temperament, both before and after marriage she suffered from incontinence of urine if going out to walk, or to church, or to dine. During pregnancy her digestive trouble was a little aggravated, but at the fifth month she was feeling well, when suddenly irritability of the bladder set in, necessitating the frequent evacuation of small quantities of urine, especially at night, when she was obliged to get up every half hour. After two nights' loss of rest I was sent for, she expressed herself as feeling well save for the urinary trouble; though weary from sleeplessness, she had no headache or vomiting, and though the face and hands looked full there was no pitting on pressure. I ordered a purgative and a diuretic, leaving directions for a specimen of urine to be sent to me. Early next morning I was called to her: on arrival I found her dazed and confused, after a couple of sharp convulsions, in which her tongue was rather badly bitten ; very soon there was another fit, I gave her a chloral enema and started chloroform ; in half an hour the enema was repeated. I examined a specimen of the urine passed during the night, and one drawn off after the convulsion came on: while the former was loaded with albumen the latter became almost solid. I induced labour, and dilatation of the os uteri proceeded satisfactorily: chloral and chloroform staved off further fits, and the fœtus was expelled in about five hours. The urine drawn next morning showed a reduction of albumen to less than a half, and the third day there was only a trace ; the irritability of the bladder disappeared at once. On the second day after delivery she described how the attack came on. She had had a poor night from frequent calls to pass water, but, though tired, did not feel unwell: between 8 and 9 a.m. she got up to urinate, when she observed that the edges of the window sashes were zig-zag, then flashes of light shot before her eyes, singing came in her ears, she fell, and remembered no more.

Case VII.—Primipara. Family history good; believes there was slight œdema of legs in later months of pregnancy, but she walked daily, in apparently perfect health, to her school up to the day of her confinement. Labour natural and easy completed within four hours ; placenta expelled in twenty minutes ; was perfectly well, laughing and talking. About twenty minutes after the doctor left she got a convulsion, he came back at once and gave her a dose of chloral; in three quarters of an hour fit recurred, and in it she dislocated her right shoulder. Morphin was given hypodermically, and when she was able to swallow, spirit of nitrous ether and jaborandi. Skin dry, catheter passed, no urine in bladder, dry cupped over loins, and nitrit of amyl inhalation, notwithstanding which fits recurred every hour, after two hours, skin became moist; catheter passed and pint of urine drawn off, almost solid with albumen; fits less frequent and severe. Skin got dry again, and temperature ran up to 108°. A cold pack and sponging brought it down to 100°; remained unconscious; died twenty-seven hours after first convulsion; suppression of urine from time catheter was passed.

ART. XIV.—*Observations on Bossi's Dilator, with Notes of Four Cases.*[a] By ALFRED J. SMITH, F.R.C.S.I.; Gynæcologist, St. Vincent's Hospital, Dublin; President of the Section of Obstetrics in the Royal Academy of Medicine in Ireland.

THE interest which the introduction of Bossi's Mechanical Dilator has aroused must be my reason for occupying the time of the Obstetrical Section. As you are aware, Bossi introduced his original three-pronged dilator in the year 1890. But little interest seems to have been taken in this question of mechanical dilatation until Leopold,[b] of Dresden, published his celebrated article in the *Archiv. für Gynækol.*, 1902. In this article he claims for the four-pronged model all the virtues, and he expresses the wish that it might soon find its way into the midwifery bag of every medical practitioner; and he adopts without reservation the five well-known claims made for the instrument by Bossi, viz.:—(1) It can be used even when the cervix is closed, and as yet unshortened; (2) the operator is sure of obtaining sufficient dilatation to allow of the delivery of a living child; (3) this can be secured if necessary in a short time—15 to 20 minutes; (4) the use of the instrument excites uterine action even in cases of inertia; (5) dilatation up to 11 cm. (4 1-3 in.) can be secured without unduly distending the vagina. The imprimatur of Leopold stimulated many workers, and soon we find reports of successful cases appearing in the journals, and hear notes of alarm being sounded, notably by von Bardeleben[c] and others. Dührssen,[d] as the originator of a rival operation—that of incision or vaginal Cæsarean section—views with a jealous eye the enthusiasm aroused by the report of these successful cases.

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[a] Read before the Section of Obstetrics of the Royal Academy of Medicine in Ireland, on Friday, February 3, 1905. [For the discussion on this paper, see page 300.]

[b] Leopold. Archiv. für Gynækol. 1902. Bd. 67. Ht. 3.

[c] Bardeleben. Archiv. für Gynækol. 1903. Bd. 70. Ht. 2. Ibid. 1904. Bd. 73. Ht. 1.

[d] Dührssen. Ibid. 1903. Bd. 68. Ht. 2. Ibid. 1903. Bd. 69. Ht. 1.

He considers the operation by mechanical dilators as a retrograde one, and backs up his opinion by a list of unfortunate occurrences and accidents; and he concludes (1) that the instrument did not always enable the operator to secure enough of dilatation for the delivery of a living child, (2) that the operator was not able to control the process, and (3) that the method was positively dangerous, some of the tears produced being followed by bleeding and some becoming infected.

Such are the views of the rival schools. Enough has been stated to indicate that Bossi's dilator has not met with universal approval or adoption. I consider it to be the duty of each to assist in determining this question, to carefully observe for themselves, and not to take for granted the dictum of anyone, however eminent. I had the privilege of showing to this Section some time ago a Bossi dilator. Since then I have employed it in four cases, which I shall shortly relate:—

Case I.—On April 24, 1904, I saw in consultation with Drs. Cope and Neill, Mrs. ———, 3-para, who was pregnant between 6½ and 7 months. She was seized with convulsions at 4 50 p.m. The first attack lasted about 5 minutes; a second convulsion occurred about 8 30 p.m. I saw the patient at 10 30 p.m. She was then drowsy, and during palpation she was seized by another convulsion. The patient was put under chloroform. On vaginal examination os admitted index finger easily; the cervix was very short and apparently taken up; the head presented. On consultation, I advised dilatation with Bossi's dilator. Accordingly at 11 p.m. I introduced the dilator and arranged to give about two minutes to dilate 1 cm., keeping control by a watch placed in a convenient position. I dilated the os 8 cm. The forceps was applied and a child delivered at 12 o'clock midnight. The placenta was expressed. The time from the beginning of the dilatation to the end of the third stage wae exactly one hour. I carefully examined for lacerations; none were found. Recovery.

Case II.—On May 7th Dr. Merrin asked me to see with him Mrs. P.——, in Holles-street Private Hospital. He stated that the patient is a primipara, and is 5½ months pregnant, and that she had two severe convulsions, one at 5 o'clock in the afternoon, another at 9 o'clock, that he administered after the first seizure ½ gr. of morphin hypodermically, and that he followed the recognised routine treatment. On admission she was complaining of pains in the back, and was undoubtedly in labour; the os was the size of a sixpence; cervix taken up. I dilated with Bossi's dilator up to 7 cm. without difficulty. Child delivered by expression. Head too small for forceps. Duration of entire operation—50 minutes. Fœtal head damaged by dilator. No lacerations. Good recovery.

CASE III.—Mrs. H. was sent up to me by Dr. Hickey, of New Ross. She was married three years and had five full term children. She missed a change on Jan. 14th of last year. About March the 24th a hæmorrhage started; it lasted on and off until I saw the patient on June 14th. I kept her under observation in a private hospital. The hæmorrhage became heavier, coming in gushes. I asked Dr. Horne to see her with me in consultation. No fœtal heart could be heard. It was deemed advisable to empty the uterus. On vaginal examination the cervix was fully an inch in length; the os so small that the unsheathed dilator was introduced with difficulty; much assistance being obtained by drawing down the cervix by an American forceps and retracting the perineum with a speculum. The dilatation was comparatively easy up to 6 cm., but I experienced much difficulty in dilating up to 8 cm., when the cervix suddenly ruptured. Presentation being transverse, I drew down a leg and delivered. On examination an extensive laceration was found extending up to the right fornix, which bled sharply and required to be stitched. There was a low insertion of the placenta almost marginal. Convalescence normal.

CASE IV.—On Oct. 14, 1904, M. H., a primipara at full term, got a convulsion during the first stage of labour. She was quite unconscious on my arrival; her urine was scanty, and loaded with albumen. The child presented in the first position; fœtal heart good; os the size of a florin. I introduced a Bossi's dilator, the patient being under chloroform, and dilated up to 11 cm. in 20 minutes. Forceps applied, and a live child delivered. There was no laceration. Normal convalescence.

Remarks.—It is difficult to dogmatise on such a small number of cases. Nevertheless I consider first impressions are of importance. That we possess in Bossi's dilator a powerful instrument is admitted on all sides.

But is it safe? I am convinced that within certain well-defined limits it has a distinct place in our armamentarium, but these limits must be clearly defined. Take my four cases—three of eclampsia and one of placenta prævia. In all the eclampsia cases labour had started, or at all events the cervix was taken up. Consequently, as I take it, the dilatation was easy—merely a matter of time and patience. On the other hand, take the placenta prævia case, with the cervix an inch in length, and none of it taken up. What was the result? In this particular case I examined continually with my finger up to the time of rupture. I was quite prepared for the event so stretched was the lips of the os. My chief concern was where would the laceration end.

I consider Bossi's dilator dangerous when the cervix is long and not taken up, especially in the case of placenta prævia. The close proximity of the uterine sinuses adds a new danger, as should the laceration unfortunately extend to and open them up in what a grave position do you place your patient?

Dynamic Action.—Numerous advocates claim dynamic action for this dilator. In other words, that it causes or sets up uterine action even in cases of inertia. I closely observed for any evidence of this influence, and I am of opinion that the dilator increases the uterine action by stimulating the large cervical when uterine action has already started. It acts much as one's finger does when we massage the region of the internal os to stimulate the uterus to contract in case of *post-partum* hæmorrhage, and I attributed the damage to the fœtal head, reported in my second case, to the strong contractions of the uterus pressing the head against the dilator before the sheaths were put on. But does it originate uterine action? I have no evidence in support of this theory.

The Degree of Dilatation.—One great difficulty confronted me in my first three cases. If a full-term head requires the os to be dilated up to 11 c.m., how much dilatation will be necessary to deliver the fœtal head at the sixth or seventh month? Surely it should not be dilated up to 11 c.m.? In none of the monographs at my disposal could I find any light thrown on this question. In order to formulate a basis for accurate observation I drew up a scale for my own guidance. I took as a standard the circumference of the fœtal head at term in the S. O. B. diameter, or 32 cm., which requires for safe delivery a dilatation of 11 c.m. I then ascertained by reference to Dr. A. Fancous' thesis[a] that the S. O. B. diameter at the fifth month is 15.9 c.m.; at the sixth month 19 c.m.; and at the seventh month 20.9 c.m. Assuming these figures to be an average, I provisionally proposed to dilate in the fifth month up to 6 c.m., in the sixth month to 7 c.m., in the seventh month to 8 c.m., recognising that during these early months one must consider the cervix as more or less of an elastic tube which, on the withdrawal of the dilator, has a tendency to contract.

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[a] Thèse pour le Doctorat en Médecin. Pesées et Mensurations Fœtales. Paris. 1897.

FIFTEENTH INTERNATIONAL MEDICAL CONGRESS, LISBON, 1906.

THE fifth number of the official Journal of the Fifteenth International Medical Congress, which is to be held at Lisbon from April 19 to 26, 1906, has been published under date February 20, 1905. Up to that time 205 original communications had been promised by authors who include some of the highest rank in the medical sciences. The programme of addresses is also far advanced. Sir Patrick Manson, Professor Brissaud, Dr. José Esquerdo, Dr. P. Aaser, and Professor Azevado Sodré, have already consented to read addresses, and the Committee of the Congress expects a favourable response from other medical scientists who have been invited to address the Congress. The organisation of the National Committees in the several countries s at last nearly complete.

QUININE AMAUROSIS.

G. H. MATHEWSON, M.D., suggests (*Montreal Medical Journal*, January, 1905) that the extreme contractions of the retinal vessels in "quinine amaurosis" may be a reflex, and serve to preserve the delicate nervous elements by cutting off the blood charged with quinine.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Serums, Vaccines, and Toxines in Treatment and Diagnosis. By WM. CECIL BOSANQUET, M.A., M.D. Oxon., F.R.C.P. Lond. London: Cassell. [No date.] [Modern Methods of Treatment Series.]

THIS very neat little book of 340 pages is the first of a series issued by Messrs. Cassell on Modern Methods of Treatment, and we shall begin our short notice by expressing a hope that the other members of the series may prove as valuable. After a historical retrospect of the development of our knowledge on the subject of immunity, the author gives us in Chapter II. a very full discussion of the various theories that have been framed to account for recovery from, and subsequent resistance to, disease. In clear and untechnical language he explains the nature of anti-bacterial and anti-toxic serum, the meaning of hæmolysis, the reasons for supposing the hæmolytic process to be due to the inter-action of two substances—the alexin and the copula. We also find an account of *precipitins* and *agglutinins*, and a very clearly expressed rendering of Ehrlich's side-chain theory. The nature, source, plurality, and deficiency of alexins are also discussed. The chapter can be recommended to practitioners and students as containing as clear an account as can be found in the English language of one of the most complex subjects in modern pathology. It is illustrated by some diagrammatic drawings which are distinctly useful. We do not find ourselves in complete accord with the writer's views in every one of his statements—*e.g.*, on page 18, where he describes the humoral theory as having established itself firmly as the true explanation of the phenomenon of immunity and resistance. Nor can we follow him in his description—on pp. 34 and 35—of the exact way in which the side-chains behave towards the toxin. And, furthermore, we think he treats the precipitin test for distinguishing the various kinds of albumen (blood-albumen included) with scant courtesy, and that he might have mentioned the name of Uhlenhuth, whose work first drew attention to the possibility of using the method as a test for the human origin of blood-stains. Still, these are slight blemishes in an otherwise excellent presentation of a difficult subject. We must refrain from following Dr. Bosanquet through the mass of interesting details which follow, and will confine ourselves to giving the essence of his conclusions regarding the value of serotherapeusis in each disease in which it has been tried.

1. Diphtheria; "Prophylaxis: Diphtheria antitoxin has a definite power of preventing the onset of diphtheria. . . . Treatment: the curative effects of the serum are well established."

2. Tetanus: "Tetanus-antitoxin cannot be expected to *cure* any large proportion of cases in whom the disease has developed."

3. Snake-venom: "Calmette's antivenene should be used promptly in all cases of snake-bite. It protects effectually against cobra-bites. It probably has no effect against the venom of snakes belonging to other genera."

4. Small-pox: "Vaccination confers an *active immunity* against small-pox and protects almost absolutely for a certain period of time. . . . Attempts to treat the disease with a serum derived from immune cattle (*antibacterial?*) have been unsuccessful. No antitoxic serum is known."

5. Hydrophobia: The author makes no statement as to the efficacy of the anti-rabic inoculation beyond saying that in all cases of bites by rabid animals recourse should be had to it as soon as possible.

6. Plague: "Haffkine's prophylactic is a valuable means of protection against plague. There is some doubt as to whether its use in the presence of an epidemic is advisable, owing to the possibility of an increased susceptibility being at first produced. The employment of some of Yersin's serum along with the vaccine seems to

offer a means of counteracting this depressing effect if it really exist. Yersin's serum is of value as a remedy. There is doubt as to the efficacy of Lustig's or of Terni and Bandi's vaccines."

7. Typhoid: "The bactericidal serum, on the market called anti-typhoid, is generally unsatisfactory in its effects. . . . Good results are reported from Chantemesse's antitoxic serum, but there is not yet sufficient material on which to form a judgment. . . . The same criticism applies to Jezs' anti-typhoid extract. . . . Wright's anti-typhoid inoculation confers some measure of protection."

8. Cholera: Haffkine's prophylactic inoculation confers a certain measure of protection, . . . but should not be performed in the actual presence of an epidemic for the reason given under typhoid.

9. Streptococcal injection: "The use of anti-streptococcic serum has been disappointing."

10. Pneumonia: Same remark.

11. Tuberculosis: (1) "The original tuberculin (T) affords a valuable means of diagnosis. . . . It is of considerable value in the treatment of some cases of lupus vulgaris, especially those in which the disease has involved parts inaccessible to direct surgical or photo-therapeutic measures. It may do good also in some cases of laryngeal tuberculosis. It is not to be recommended for use in phthisis or other forms of internal tubercle, and is absolutely contra-indicated in tubercular meningitis. The new tuberculin (T. R.) is worthy of trial in pulmonary tuberculosis. (2) Agglutination-test: This method of diagnosis as at present carried out is complicated and unreliable. (3) Serum-treatment: This is at present unsatisfactory. (4) Anti-streptococcic serum appears to have given good results in cases of pulmonary tuberculosis accompanied by the presence of large quantities of streptococci in the sputum. (5) Protective Vaccination: Of this it is too soon to form any judgment."

12. Malignant Disease: (1) "Coley's fluid may be tried in inoperable cases, especially of sarcoma. (2) Until it is proved that cancer is an infective disease serum treatment

of the usual kind is inapplicable to this condition. It is, however, permissible to hope that it may be possible to produce a cytolytic serum which may act on the cells of the growth without affecting the normal cell of the tissues. A satisfactory serum of this nature does not appear to have been as yet prepared."

We cordially congratulate Dr. Bosanquet on having produced so useful a manual, and can heartily recommend it to all who stand in need of clear, up-to-date, and practical information on a subject of both therapeutical and theoretical importance. We may add that full details as to dosage and mode of procuring the several serums are given. The foot-notes contain several misprints—*e.g.*, those at foot of p. 26.

Elementary Lectures on Errors of Refraction and their Correction. By HAROLD B. GRIMSDALE, F.R.C.S. 8vo. Pp. 87. London: The Medical Times, Limited. 1904.

THIS very readable little volume contains a simple, straightforward, elementary account of the subjects with which it deals. Each section of the subject is simply stated and illustrated by cases which serve a useful purpose in impressing upon the student the practical application of the principles stated. On the whole, we can recommend this book as a useful one for the beginner.

Handbook of Diseases of the Ear, for the use of Students and Practitioners. By RICHARD LAKE, F.R.C.S. Crown 8vo. Pp. 242. With 51 Illustrations and 3 Coloured Plates. Second Edition. London: Baillière, Tindall & Cox. 1904.

AS it is not long since we reviewed the first edition of this excellent handbook, we note with great pleasure the advent of a second edition. The volume is of convenient size, and though it must of necessity omit certain portions of so large a subject as Otology, it omits nothing that is essential for the proper understanding of the subjects treated of, and its moderate size and price make it acceptable to many who would be unable or unwilling to cope with a more exhaustive treatise. It is a most useful and reliable book.

The Chief Operations of Ophthalmic Surgery. A Practical Guide for Students. By HAROLD B. GRIMSDALE, F.R.C.S. London: The Medical Times, Limited. 1904. 8vo. Pp. 144.

THE author, in his preface, tells us that "the primary object of this little book is to enable the student to learn—so far as is possible by actual practice on dead animals—something of the chief operative procedures in ophthalmic surgery. It is an attempt to give him, in convenient form, the means of teaching himself to acquire a certain knowledge and facility, which will, if occasion arise, prove useful to him in his general work." It is not, he says, his intention to produce a complete account of all ophthalmic operations, but rather to produce a handbook for the student, not a history of the art.

The ordinary handbooks of ophthalmic surgery give, with considerable fulness, descriptions of the ordinary operations, such as a student requires to know, and Dr. Grimsdale does not give by any means a full description of *all* the operations that are or have been performed, and therefore it does not seem to us that his book will be of very much value to either the student or the specialist. The author has succeeded fairly well in the rather difficult task which he set himself to perform. His descriptions are, for the most part, clear, and his diagrams understandable, which is more than can be said of some text-books on the subject. His choice of operations is, however, not always the best. For instance, he describes Mutermilch's modification of Van Millingen's operation for entropion, than which it is hard to imagine one more calculated to deter the surgeon and weary the patient by its unnecessary complexity. He (following Mutermilch) fears to put a suture through the mucous membrane flap lest he should cause its death. This fear, in our experience, is quite groundless. He allows an unnecessary amount for contraction of the flap, as he does not seem to know that mucous membrane is quite unlike skin in this regard, and he waits for the cessation of all hæmorrhage before adjusting the transplanted flap—a precaution that is needless.

For those requiring a book of the sort we can recommend Dr. Grimsdale's handy volume as fulfilling fairly well the conditions laid down in the preface.

Body-Building, or Man in the Making; How to become Healthy and Strong. Containing Sets of Exercises and Special Photos of Mr. Sandow and family. Written by Eugen Sandow, author of "Strength and How to Obtain It." London: Gate & Polden, Ltd.

This volume deals with a subject which all readers must allow to be of universal interest and deserving of the best attention—both lay and medical. One of its special recommendations is furnished by the venerable adage, *Mens sana in corpore sano,* which is admitted by all to occupy an impregnable position in the crazy-quilted domain of physico-metaphysical dogma. Another—of recent birth, and, consequently, of fresher flavour—is furnished by the current discussion of the question of the "physical deterioration" of the British subject—in general, if not in special. Whether or not the genesis of this notion be really derivable, as some think, from the "epigastric depression" of "British prestige" produced by the unlooked-for solar-plexus concussion delivered by the Boer war, there can, we think, be no doubt that a careful consideration of all questions connected with physical growth and development is of the highest national, as well as individual, importance.

So far as we can now see by the aid of the illumination afforded by the combined rays of history and of analogy, the ruler of the tribe or clan among all primitive groups of humanity must have been the individual who excelled in physical strength and the accomplishments therewith connected. Violence was, of course, the great source of danger; and gregarious man adopted the best measures which the times presented of protecting himself against contemporary man and beast. He was obliged, accordingly, to submit to certain inconveniences in return. The late Professor Huxley explained that the great reason which induced *him* to live under the restraint of British Government and pay taxes—ungrudgingly—to the representatives thereof was the reflection that if he chose the opposite alternative extreme, and retired into the primitive wilds of some territory unaffected by civilisation or modern social customs, some stronger savage in passing that way would be likely to assume the ownership of his hut and any other covetable belongings which he might have accumulated. No hope of redress could, of course, be looked for under such conditions; and the "wild justice" of revenge, if not attempted with skill and favoured by fortune, would surely leave the weaker individual in a worse state than before. Short as is the period which has elapsed since the enunciation of the persuasive views of Professor Huxley, we have entered upon a distinctly new era. Our age and generation are wholly democratic, and in our own island we are endeavouring—more or less noisily—to work out a popular scheme of revolutionary salvation. This state of things lands us for the time being in the midst of conditions of which many are approximately primitive, and in which the muscular energy of the individual tells for much more than it is allowed to do in a more settled state of things. In the continuous ebullition of a seething revolution, the success of the battle of "grab" will always, pretty surely, lie with the strong; and, accordingly, we may find even in a profession (formerly) learned, and among the representatives of a community of (formerly) saintly reputation, that an anthropoid mass of vulgarity, dishonesty, ignorance, impudence, immorality, infidelity, and ruffianism, when projected into professional space with the "long-Tom" propulsion of prodigious muscularity, may attain a foremost position, and a reputation for "eminence"; which could never be secured by corresponding qualities in a less mobile generation and community. Not only does this age recognise the "dignity of labour"; it also confers upon muscle some of the special rewards which in former centuries were usually regarded as the exclusive perquisites of intellect. The greatest French scientist of his generation was told, as he was being led to the guillotine by the apostles of liberty, equality, and brotherly love, that there were *no savants wanted* in the newly-established republic. Agility of tongue and limb, combined with suppleness of conscience, were the essential qualifications for public promotion. Accordingly, every condition in these opening years of the twentieth century furnishes a recommendation to careful and systematic physical culture. And everyone must admit that Mr. Sandow is a safe and skilful guide in this department. Accordingly, we have great pleasure in recommending his volume to the attention of all our readers.

A Guide to Anæsthetics for the Student and General Practitioner. By THOMAS D. LUKE, M.B., F.R.C.S. (Ed.); Instructor in Anæsthetics (University Surgical Classes), Royal Infirmary; Anæsthetist to the Deaconess Hospital, and the Dental Hospital, Edinburgh. With 40 Illustrations. Second Edition. Edinburgh and London: William Green & Sons. 1905.

IT is difficult to overestimate the important part played by the anæsthetist in the operating theatre. The ideal anæsthetist should not only know the physical, chemical, and physiological properties of all our anæsthetic agents, but he should know how best to administer them and how best to deal with any untoward event that should occur. Above all, he should have no prejudice for or against any anæsthetic. The book before us is in many ways an excellent guide to the student, but it is marred by some blemishes. The author starts with a pronounced prejudice against chloroform, thus whilst properly drawing attention to the fact that chloroform is ten times stronger than ether, he passes immediately to the consideration of the stages of chloroformisation. We think that after such a statement the author should have impressed on the student the chemical reason for the greater toxicity of the drug and the necessity it imposed on the administrator for giving his undivided attention to his duty. The apparatus for administering this potent remedy include (page 49) a handkerchief, a napkin, a piece of lint, and a towel. We do not hesitate to say that the use of any one of these vehicles is fraught with the greatest danger, and the high death-rate under chloroform has been largely due to their use. As a minor detail we would point out that chloroform was discovered by Dr. James Guthrie, a friend of George Washington, and not by Soubeiran. It might also have been explained to the student that Dumas was wrong in his supposition that chloroform was a formyl product. We have pointed out what we consider blemishes in an otherwise good text-book. We feel it our duty to do so, because we believe the book will run through many editions, and we hope that the author will not look on our criticisms in a hostile light, but accept, as they are intended, to wit—suggestions for the removal of a few faults that mar an otherwise valuable guide to the use of anæsthetics.

X-rays: Their Employment in Cancer and other Diseases. By RICHARD J. COWEN, L.R.C.S.I., L.R.C.P.I., &c.; Member of the British Electrotherapeutic Association. London: Henry J. Glaisher. 1904. Pp. viii 129.

THIS little work contains, for its size, a large amount of useful and interesting information, and is well worth perusal by those who are desirous of using the therapeutic properties of X-rays in treating their patients. Dr. Cowen describes concisely his own experiences in various diseases, and the most satisfactory lines of treatment which he has evolved. He cites several of his cases in detail, and has not failed to draw attention to those in which undesirable effects were produced.

The book gives a fair indication of the results to be expected when X-rays are freely used—the author stating in his article on carcinoma that the extraordinary precautions recommended by some writers against excessive reaction are really unnecessary. The beneficial effects on the disease, he contends, are generally sufficiently marked to render the patient willing to undergo the additional discomfort of severe dermatitis. Further, this condition is extremely unlikely to occur if the case is carefully watched, and it is very fairly amenable to treatment.

The first chapter deals with the effects produced on the tissues and on organisms generally by X-rays as obtained from the focus tube.

Chapter II. describes in a sketchy manner X-ray apparatus (coils, interrupters, tubes), and contains most of the ten illustrations in the book.

The treatment of hypertricosis and lupus vulgaris are discussed in Chapters III. and IV. The author considers that X-rays have a more extensive range of usefulness than Finsen Light in the latter disease.

Chapter V. is the most important in the book, and treats of malignant disease, especially cancer. The author recommends that X-rays should be applied before operation (as well as after it) to reduce the glands to normal size and a healthy condition, thus rendering it unnecessary to remove them. This procedure, according to his view, tends to lessen the chances of metastasis, as the glands are not removed, and also of recurrence, as the vitality of the part is not so impaired by the extent of the operation.

The remainder of the book treats of skin diseases, the administration of fluorescent substances in X-ray treatment, and general remarks.

It is a regrettable point that Dr. Cowen should designate X-rays as emanations, it being rather confusing, as he has necessarily to refer to the emanation proper of radium by the same name.

Lectures on Clinical Psychiatry. By Dr. Emil Kraepelin. Authorised translation, revised and edited by Thomas Johnstone, M.D. London: Baillière, Tindall & Cox. Demy 8vo. Pp. xvi + 308.

Dr. Johnstone has done a real service to English readers in placing at their disposal this translation of Professor

Kraepelin's illuminating lectures, to which he has added a useful table enabling the subjects dealt with to be studied in consecutive order.

The volume treats mental disease essentially from the clinical standpoint, the diagnostic point of view being kept in the foreground, although prognosis and treatment are given a due amount of attention; in fact it may be regarded as a necessary supplement to the more systematic treatise of the author, whose avowed aim is to furnish "a guide to the clinical investigation of the insane." In this aim he has amply succeeded. The lectures are not only admirable and vivid word-pictures of the cases described, but impressive lessons on the method of approaching a mental case, and on the value of close clinical observation; and, however much one may disagree with some of the author's principles of classification, it is impossible to read through these pages without learning many facts of the utmost importance and gaining many suggestions, while feeling that here we have the opinions of a really great clinician.

The scope of the lectures includes practically the whole group of mental diseases as understood by the author. Thus we have lectures on melancholia; maniacal-depressive insanity; dementia præcox; general paralysis; paranoia; traumatic, epileptic, hysterical, puerperal, and various toxic insanities; imbecility; delirium; delusions; irrepressible ideas and irresistible fears; morbid personalities; and, in the concluding lecture, a masterly sketch of the ætiology of insanity as at present understood or conjectured.

In this country Professor Kraepelin is perhaps best known in connection with the much-disputed dementia præcox, a subject which he has made peculiarly his own, and indeed largely originated; and we naturally turn to the lectures on this subject in the expectation of obtaining fresh information. It is interesting to find (p. 22) that he has come round to the view that it is a "peculiar and fundamental want of any *strong feeling of the impressions of life* [the italics are Kraepelin's], with unimpaired ability to understand and to remember," which "is really the diagnostic symptom of the disease"—that is to say, the essential symptom of the disease is psychical. Now, Kahlbaum's classification, out of which the conception of dementia præcox has been evolved, is expressly based on a consideration of the whole ætiology and the grouping and course of the symptoms, in opposition to the old classification according to mental phenomena only. Yet here we find the leading exponent of dementia præcox declaring that the really essential symptom is a mental one, a peculiar form of dementia. It is a remarkable example of the cycles in which opinion seems to have a tendency to revolve amongst alienists. The cases given are well-selected examples of this group of symptoms, which undoubtedly is frequently met with in practice, whether it be merely a symptom-group or a real morbid entity. This only the labours of the pathologists can decide.

Passing over countless points deserving note, such as may be met with on almost every page, we may briefly observe the interesting and useful application of psycho-physical experiment, with which this author's name is also intimately connected, to the detection of feigning, an application of great medico-legal importance. Kraepelin declares that "it is quite impossible, even for those who are accurately acquainted with the governing laws in this department, to wilfully counterfeit the particular mental disturbances here presented," wilful deception being always betrayed by the disagreement of the results one with another.

We would commend the remarks on causation in the concluding chapter to those who make such positive assertions as to the origin of mental diseases; and we should like all blind supporters of Kraepelin's ever-varying classification—many of whom are so much more certain than the great alienist himself—to read, mark, learn and inwardly digest the sentences with which his book closes:—"We are still so far removed from a real knowledge of the causes, phenomena, course, and termination of the individual clinical forms that we cannot yet dream of a surely established edifice of knowledge at all. What we have formulated here is only a first sketch, which the advance of our science will often have occasion to change and enlarge in its details, and perhaps even in its principal lines."

The translation has been admirably done, and notwithstanding a few infelicities the book reads like a pleasantly-written English work. It is not usual in this country, however, to print names of authorities in italics.

An Introduction to Dermatology. By Norman Walker, M.D. Third Edition. Bristol: J. Wright & Co. 1904. Pp. 284.

This edition represents, we think, a considerable improvement upon the first impression, and, by making some omissions, the author has been able to introduce new matter of interest without increasing the size of the book. The style of composition is easy, almost colloquial, sometimes, perhaps, a little slipshod.

The photographs illustrating the text are sufficiently good, but some of the coloured plates are poor, and it is a pity to disfigure a book by such a travesty of art and nature as Plate I.

Electrotherapy now plays an important part in dermatology, and naturally, therefore, a good many references are made to it. Many valuable practical hints as to treatment are given, and we cull a few of these.

In that obstinate and sometimes distressing affection, lichen planus, although arsenic is, and we think justly, the favourite remedy, Dr. Norman Walker finds that mercuric chloride is the most efficacious drug. He has observed that in some cases the disease disappears under this treatment (1-12 gr. three times a day) with a rapidity which is unapproached by either arsenic or antimony.

In mycosis fungoides, that mysterious and terrible disease, we now have in the X-rays "a remedy of almost miraculous virtue." Photographs are given in illustration of its surprising effects. Similarly, the effect of X-rays upon warts is most remarkable. The author has seen crops of 200 or 300 flat warts totally disappear after a series of exposures to the rays amounting altogether to about an hour.

For boils no method is so satisfactory as the application of Unna's mercury and carbolic plaster. "Boils which appear as if they must inevitably burst slowly melt away under its continuous application, while less advanced ones disappear as if by magic."

Year-Book of the Scientific and Learned Societies of Great Britain and Ireland. A Record of the Work done in Science, Literature, and Art during the Session 1903-1904, by numerous Societies and Government Institutions. Compiled from official sources. Twenty-first Annual Issue. London: Charles Griffin & Co., Ltd. 1904.

This valuable Year-book contains a concise review of the history, organisation, and conditions of membership of the various scientific and learned societies of Great Britain and Ireland, compiled from data furnished by the societies themselves. But it does much more than this, for it shows, as no other Year-book does, the trend of scientific thought in every branch of the subject. This is particularly shown in the case of Medicine, and by examining its pages the student of medicine gets a *résumé* of the lines of advance of scientific medicine. To such students it possesses a permanent value and is most helpful.

The Purin Bodies of Food Stuffs, and the rôle of Uric Acid in Health and Disease. By I. Walker Hall, M.D. Second Edition. Manchester: Sherratt & Hughes. 1903. Pp. 201.

This volume constitutes one of the series known as the Manchester Medical Handbooks. Dr. Hall's object in undertaking his laborious investigations was to obtain further information as to the action of purin bodies, and their metabolism, and to discover some means whereby the early pathological changes in certain disorders may be detected.

The book represents a serious scientific study of a subject upon which much loose thought and teaching prevail, and the author properly deprecates an attitude of over-enthusiasm about the particular purin body known as uric acid.

The term "purin nucleus" is applied by E. Fischer to a nucleus, C_5 N_4, and hence all bodies built up upon such a foundation may be included under this name.

The purin bodies of ordinary occurrence are hypoxanthin, xanthin, uric acid, guanin, adenin, caffein, and theobromin. Nearly 150 different purin combinations have been produced in the laboratory. Owing to their affinity for silver and copper salts the purin bodies can be fully precipitated by silver nitrate in ammoniacal solution or by cuprous oxide in presence of sodium bisulphite.

It is well to note that these bodies are by some writers termed alloxur bodies (or bases) or xanthin bodies.

The purins occurring in the urine are derived from two sources, viz.—the food (exogenous) and the body metabolism (endogenous). Only about 50 per cent. of the exogenous purins which are ingested are excreted as such in the urine. The rest ultimately appears, chiefly as urea, partly as uric acid.

The endogenous purins are, in part, derived from leucocytes, but mostly from the cell metabolism of nutrition.

Dietaries can be prescribed which are almost free from purin bodies—*e.g.*, milk, cream, and cheese. Uric acid is merely one of the series of purin bodies, and the *rôle* of this much-exploited substance has undoubtedly been frequently over-rated.

Dr. Hall has invented a simple apparatus (figured in the text), called a purinometer, for the ready estimation of purin bodies.

An extensive bibliography of more than 250 references testifies to the amount of work which has been expended upon the subject. Certain vegetable foods contain purin bodies—*e.g.*, peas, beans, oatmeal, asparagus, and onions, and so we can understand the high uric acid excretion which follows their ingestion. There is very little difference in the amounts contained in white and dark meats, a fact we commend to the attention of diet faddists.

One of the most important practical conclusions arrived at by the author refers to uric acid, and we quote his words (p. 157):—"Uric acid is a necessary result of normal nuclein metabolism. In disease it is symptomatic of conditions which hinder or prevent its solubility and excretion, and it does not itself cause the lesions which accompany uric-acidæmia. Drugs are unable to increase its solubility in the blood stream, but they may promote the normal processes of nuclein metabolism through hepatic stimulation." . . . "The action of the purin bodies upon the alimentary system (Pawlow) strongly contra-indicates the employment of meat extracts or soups in hyperchloridia."

We strongly recommend a study of Dr. Hall's work to all those who wish to base their clinical teaching or daily practice upon a sound basis of scientific knowledge rather than upon the shifting morasses of idle albeit fashionable hypotheses.

Transactions of the Clinical Society of London. Vol. XXXVII. London: Longmans, Green & Co. 1904. Pp. 273.

In this volume we find, as usual, many interesting and important records. Two cases of hæmorrhagic pancreatitis are described. One was operated on because of symptoms simulating intestinal obstruction; in the other the abdominal symptoms were overshadowed by those due to severe bronchitis. Both patients died. Dr. Batten has a careful and well-illustrated paper on myositis fibrosa. Dr. Wallis records a remarkable case of intussusception of two years standing, in which recovery followed the excision of 42 inches of intestine. Dr. Maylard mentions seven cases of congenital narrowness of the pyloric orifice, cured by gastro-enterostomy. These cases occur among young adults, and present symptoms of various kinds of indigestion: the fact of the pyloric stenosis is often overlooked. The paper will repay study.

There are a good many papers on the various forms of anæmia. Drs. Weber and Watson record a remarkable case of cyanosis with polycythæmia and enlarged spleen, and give a list of the works that have appeared on this subject. Drs. Wallace and Marriage report a very interesting case of a young woman with complete deafness of the left ear associated with most distressing noises in the head, to relieve which the auditory nerve was divided. The operation is described. The patient, who had been in wretched health, died twenty-one days after the operation. It was remarked that the tinnitus had been lessened, though not cured, by the section of the nerve. Drs. Green and Brook contribute a profusely-illustrated paper on the use of X-rays in the detection of pulmonary tuberculosis. They have formed a very high opinion of this method.

There are other valuable papers in this volume, which are quite up to the usual high standard of the Clinical Society's "Transactions."

The Nervous Affections of the Heart. Being the Morrison Lectures delivered before the Royal College of Physicians of Edinburgh in 1902 and 1903. By Geo. Alexander Gibson, M.D., &c.; Physician to the Royal Infirmary, and Lecturer on Medicine in the School of the Royal Colleges, Edinburgh. London: Pentland. 1904. Pp. 99.

This book contains six lectures, well written and instructive, on a most important subject, and one which, although familiar to every physician in his daily practice, nevertheless is in many respects shrouded in extreme obscurity. There is no organ in the body and no subject in medicine to which more attention is directed than the heart, and yet how often it occurs that we are unable to say why it is the seat of pain, why it beats irregularly, and, may be, why it ceases beating at some particular moment. We therefore welcome Dr. Gibson's lectures as a valuable contribution to the literature of the subject.

The first lecture is devoted to the clinical aspects of the case. The symptoms connected with heart-pain are fully described, and a number of diagrams are introduced which show very exactly the distribution of pain and of tenderness in various cases. Dr. Gibson protests against the use of the terms true angina, and false or pseudo-angina. In their place he proposes to divide the varieties of cardiac pain into two categories—organic and inorganic. The "organic" class comprises those cases which are dependent on some discoverable lesion; the "inorganic," those which are due to some neurotic or toxic causes. These terms, organic and inorganic, are more scientific than true and false, but they have no very different meaning from these.

The second lecture is pathological, and describes the nerve connections of the heart. These are elucidated by several diagrams of the cardiac plexuses and nerves.

The third lecture is devoted to the therapeutics of the affection. It contains a good *résumé* of the subject, but nothing specially new that calls for comment.

Lecture IV. treats of the rate of the heart's action. Some remarkably instructive tracings are introduced showing the effects of stimuli on different parts of the heart, and also demonstrating that in some cases of slow pulse the auricles contract normally, but only every third or fourth auricular systole extends to the ventricles—a "heart-block" occurring.

In Lecture V. rhythm is considered. Dr. Gibson holds that irregularity has often been over-estimated in its importance, and reminds us that many animals—notably dogs—normally have irregularly-acting hearts. Irregularity may be due to various causes, two of the commonest being (1) a premature and ineffectual systole and (2) a prolonged diastole. Of these, the former is often associated with some organic lesion; the latter is the usual cause of irregularity in early life, and the cause of it is generally to be found in nervous influences. There are some peculiarly instructive tracings of pulsus paradoxus, showing both the respiratory rhythm and the pulse waves; a remarkable tracing from the jugular vein and apex beat, showing hemisystole—*i.e.*, two contractions of the right side of the heart for one contraction of the left; also another of the radial pulse and jugular pulse, showing two radial beats for one jugular. This condition (hemisystole) has been generally looked on with incredulity, but these tracings go a long way towards proving its reality.

The last lecture is on the force of the heart beat, palpitation and tremor of the heart, and contains practical hints for the treatment of these distressing conditions.

We have studied Dr. Gibson's lectures carefully. It is long since we have found any medical work at once so enjoyable and so instructive. We can cordially recommend it to the notice of our readers.

A *Treatise on Materia Medica and Therapeutics: including Pharmacy, Dispensing, Pharmacology, and Administration of Drugs.* By RAKHALDAS GHOSH, L.M.S., Cal. Univ.; Lecturer on Materia Medica, Calcutta Medical School. Edited by C. P. LUKIS, M.B., F.R.C.S.; Lieut.-Colonel, Indian Medical Service; Offg. Professor of Therapeutics, Calcutta Medical College. Calcutta: Hilton & Co. 8vo. pp. xii + 682.

THE extensive dominion over which the author of this volume has undertaken to legislate and expound is far too wide indeed to permit an exhaustive rendering of even any one of the subjects therein included at all possible within its allotted space. But the design has been carried out with conscientious care and very considerable skill. There is a pathetic reminiscence in connection with the production of the concluding portion of the treatise. Dr. Rakhaldas Ghosh had published one volume of the work to the preparation of which he had devoted the concluding years of his life, and had nearly completed the manuscript notes for the second (and concluding) volume. But his untimely and lamented death, which occurred in August last, prevented his carrying to a close the task on which he had set his heart. The charge of editing the second part was consigned to Lieut.-Col. Lukis, who feelingly tells us of his deceased friend: "Almost his last words were, 'Do not let my work die.'" The editor informs us confidently that "in these two small volumes the student will find in a compressed form not only everything of value that has been written on the subject of therapeutics, but also many original observations culled from Dr. Ghosh's own practice and embodying the results of his long experience in the treatment of disease in the tropics. I can, therefore, with every confidence strongly recommend them to the notice of all those who propose to practise their profession in the East."

The task so outlined was, of course, a colossal one; and the claims advanced by Lieut.-Col. Lukis are as comprehensive as imagination even could conveniently suggest. Still, we have confidence in saying that, having regard to the limitations of inexorable space, the chosen work of Dr. Ghosh has been successfully carried out, and the claims advanced by his editor have been fairly justified. The "Publishers' Note" informs us that "in the present edition portions of the book have been carefully revised and new matters introduced where necessary to bring the work thoroughly up to date." In the single volume issue now before us, the "Contents" are arranged under four heads: I. "Materia Medica Proper"; II. "Pharmacy and Dispensing"; III. "Administration of Drugs"; IV. "Pharmacology and Therapeutics." The reader will find an enormous amount of material condensed within these pages. The treatise is, of course, specially intended for the use of students and practitioners of the Indian Section of the British Empire; but our Western fellow-practitioners can refer to it with advantage, as it contains much interesting and valuable information concerning items and methods of therapeusis which are not included in our own standard manuals.

The Dublin University Calendar for the Year 1904-1905. Volume II. Dublin: Hodges, Figgis & Co. London: Longmans, Green & Co. 1905. 8vo. Pp. iv + 351.

THIS volume, as usual, contains lists of the honours and prizes awarded at entrance and in the three collegiate terms during 1904; also lists of the prizes and examinations in the several professional schools—Divinity, Law, Physic, and Engineering—and of the degrees conferred in the year 1904.

The list of officers of the various Collegiate Societies, of Prizemen and of Graduates in Honours and in the several Faculties, is given in continuation of the list contained in the special Supplemental Volume of the Calendar for 1901. Among the "Benefactors of Trinity College" are included the subscribers to the fund now being raised with the object of erecting and equipping Science Laboratories in Trinity College for teaching the experimental and natural sciences. In response to the appeal made for this purpose in the summer of 1903, the Right Hon. Lord Iveagh came forward with the generous offer of £34,000 conditional on the success of the appeal.

"Trinity College, 1905," is pleasant reading, because a gratifying increase is shown in the total number of students on the College Books under the standing of Master of Arts. The figures are—Scholars of the House, 70; Fellow-Commoner, 1; Pensioners, 978; Sizars and ex-Sizars, 39; total, 1,088.

Lists of the "Senatus Academicus" and of Parliamentary Electors of the University of Dublin conclude the volume, which bears throughout its pages evidence of careful revision by the editor, Mr. M. W. J. Fry, F.T.C.D.

A Text-book of Clinical Anatomy for Students and Practitioners. By D. N. EISENRATH, M.D.; Professor of Clinical Anatomy, University of Illinois; Surgeon to the Cook County Hospital, Chicago, &c. Beautifully Illustrated. Philadelphia: W. B. Saunders. 1904. Pp. 515.

THE object of this work is to supply a bridge whereby the student or practitioner may more easily pass from the descriptive anatomy, such as is taught in the medical schools, to its application at the bedside or in the operating room. The various regions of the body are taken up one by one, much attention is paid to surface anatomy, and the student has frequently impressed upon him the necessity of palpating and examining structures the knowledge of whose position is indispensable to everyone engaged in the practice of medicine.

Attention is directed to many morbid conditions as well as to what is normal; many fractures and dislocations are figured, and the anatomical factors which determine their peculiarities are described.

The book contains many instructive illustrations. Our chief criticism is that we think the work might have been made a good deal smaller by the omission of many anatomical facts with which anyone who has passed in anatomy must be familiar; thereby the clinical applications of anatomy might have been made more prominent, and we should have been spared much of what is contained in the ordinary text-books of anatomy.

Elements of Anatomy and Physiology. Especially adapted for Nurses. By W. Bernard Secretan, M.B., F.R.C.S. London: The Scientific Press, Limited. 1905. Pp. 74.

This is little more than a lecture note book, and is hardly full or clear enough to enable a nurse to clear up any point she found it hard to understand in a lecture. It would be better to deal with the subject at a little more length. For example, having dealt with the two ways in which the capacity of the chest is increased by the action of muscles, the author simply adds "diminution is, of course, brought about by reverse actions."

The illustrations are clear and well chosen.

PERINEAL SUTERING BEFORE LACERATION.

Dr. A. Lapthorn Smith recommends (*Montreal Medical Journal*, January, 1905), that in primiparæ with delayed labour where there seems a probability of laceration of the perineum, an anæsthetic should be administered, the perineum should be disinfected, and one, two or three gut stitches (according to the extent of laceration expected) should be inserted. If laceration takes place, the edges can be at once drawn together and perfect adaptation secured; if the perineum escapes, the stitches can be withdrawn.

PART III.

SPECIAL REPORTS.

PROGRESS OF NEUROLOGY AND PSYCHIATRY.

By W. R. Dawson, M.D., F.R.C.P.I.; Medical Superintendent, Farnham House, Finglas.

Pathology of Infantile Paralysis.—In the autumn number of *Brain* (p. 376) F. E. Batten maintains that ordinary infantile paralysis is due to thrombosis of the branches of the anterior spinal artery supplying the grey matter of the anterior horn. His contention is based on the pathological examination of three cases in which death had ensued respectively fourteen days, thirteen weeks, and two years after the occurrence of the disease. In the first the changes were acute inflammation in the grey matter of the anterior horns (chiefly), with small-cell infiltration, hæmorrhages, and thrombosis of vessels; in the second there was an area of necrotic tissue limited to the anterior horns in the lumbar and sacral regions; and in the third, reduction in size of the anterior horn on the affected side, due to cicatricial contraction. The changes found in the first case are similar to those produced by artificial thrombosis of small vessels (Prevost and Cotard) and by pathological thrombosis of small cerebral vessels, and the distribution of the lesions corresponds with the area supplied by the anterior spinal artery, while the occurrence of the disease is most frequent in the lumbar region, the part of the cord most distant from the main source of blood supply. The clinical incidence of the disease suggests a bacterial origin, but it is probably not due to one special form of infection only.

Bilateral Facial Paralysis after Influenza.—A case is reported by F. W. Langdon (*Journ. of American Medical Association,* Jan. 21, 1905). The patient, a teacher, four weeks after influenza took a short railway journey, and next day was unable to close his right eye. A day or two later his left eye also became affected, and ultimately both facial nerves, upper and lower divisions, were paralysed. He was unable to frown, smile, close his mouth, or contract his tongue longitudinally, speech and swallowing were somewhat effected, and taste was impaired, especially on the right side. In about a week he began to improve, and improvement progressed to almost complete recovery, though some five months later he still felt his eyes "not fully natural" when very tired. A curious point about the case was that the knee-jerks were abolished for a short time at the commencement of the attack, and that both legs sweated profusely from the knee down.

Indoxyl in the Urine in Mental Depression.—In support of the theory that melancholia is in many instances due to auto-intoxication produced by the absorption of toxins from the alimentary canal, to which he considers many of the physical signs attributable, A. A. D. Townsend (*Journ. of Ment. Sci.*, Jan., 1905, p. 51) brings forward the results of two and a half years' observation of the occurrence of indoxyl in the urine in the insane. They are briefly as follow:—In depressed states of mind indoxyl is excreted in excess, the patients exhibiting symptoms and signs of toxæmia, whereas in states of mental elation the amount of indoxyl is normal or less. Sometimes, however, indoxyl is in excess in both stages of alternating insanity. The amount of indoxyl is proportional to the severity of the mental attack, and the toxæmic phenomena increase *pari passu*, while mental recovery is preceded by reduction of the excreted indoxyl to normal. Intestinal antiseptics have not been found to give satisfactory results, and the only line of treatment which reduced the amount of indoxyl was free purgation and a diet exclusively of milk.

Surgical Treatment in Neuroses and Psychoses.—C. Hermkes (*Archiv. f. Psychiat. u. Nervenkrank*, Bd. xxxix., Heft., 1, S. 53) discusses the value of surgical treatment in neuroses and psychoses, chiefly with reference to gynæcological procedures. The aid of surgery has been called in for one of two reasons (not always, however, to be sharply separated)—viz., to remove a source of irritation thought to give rise to the nervous trouble or in the hope of curing nervous symptoms by removing organic disease which the former simulated. The author concludes that neither theoretically nor practically is trephining justifiable in *epilepsy* unless a well-defined focus can be made responsible for the seizures. Operations on the generative organs, as well as on other parts, have been undertaken in hundreds of cases for the treatment of *hysteria*, and have varied in severity from curetting to total ablation of the uterus and adnexa. The results have been very variable. Thus Krœmer collected statistics of 300 such operations on the ovaries, &c., and found that improvement had resulted in 70 per cent.; no result or a bad one in 30 per cent. But of 115 cases of ablation of the ovaries reported by Angelucci and Pieraccini only five showed a favourable result, while 17 became markedly worse. In eight cases of Michel's both bodily and mental state were distinctly disimproved. The author concludes that the disease must really be regarded as central, and that the various local phenomena are due partly to an increased sensibility and partly to heightening of the susceptibility to suggestion, and that cure is, therefore, not to be expected as a direct result of local operative interference. In five cases which came under his own observation, operation merely changed the locality of the symptoms. These were respectively cases of gastric pain; gastric, ileo-cæcal, and generative discomfort; pain in the ileo-cæcal and generative region only; pain in the breasts; and spasm of the muscles of one side of the neck. All were hysterical, and all were operated upon, the procedures being respectively laparotomy (no disease found); ventrofixation of a retroflexed and fixed uterus; removal of the right adnexa and vermiform appendix; ablation of both breasts; and division of the spinal accessory nerve. In all cases the patients' state became worse, usually at once, as the result of the operation, and improvement or cure was effected only by a prolonged course of general treatment. In a case of *hebephrenia* with testicular pain castration failed to effect the slightest change in the patient's condition. Patients who simulate disease to render themselves interesting, or to secure treatment, can obviously not be helped by surgery; and the author's experience is that such procedure, adopted for the sake of suggestion only, is invariably without result. He also sounds a note of warning by instancing a case where gynæcological procedures set up the habit of masturbation in a hysterical woman. As regards the induction of abortion for vomiting of pregnancy (which is considered to be of nervous origin), eclampsia, chorea gravidarum, and mental depression during gestation, while admitting that it may be necessary in some cases, the author counsels reluctance to undertake it. His general conclusion is that an appeal should be made to surgery only where there is a distinct objective reason, usually only where the operation would be undertaken if there were no nervous trouble; and even then it would be better, if possible, to wait until the latter is cured.

Treatment of General Paralysis by Urotropin.—Two cases are reported (*B. M. J.*, Vol. I., 1905, p. 185) by N. F. MacHardy. The first had suffered from symptoms of the disease for two years, and on admission (in Oct., 1902) was dangerous and violent, with grandiose delusions. In about a month he had become so much worse that he was confined to bed, was very weak, and his bladder had to be emptied by catheter. He was then given urotropin, beginning with 5 gr. daily and increasing to 15 gr., and in less than seven months all the symptoms of general paralysis had disappeared. He was shortly afterwards sent home on probation, and was well some months later.

The second case was one of about five months' standing, and showed well-marked physical signs of general paralysis, with delusions of grandeur. He had to be catheterised. He improved after admission, and in a fortnight was put on 5 gr. doses of urotropin twice daily. This, however, had to be stopped for a week or so, owing to hæmaturia, and the patient retrograded; but on repetition of the drug in smaller doses he rapidly improved, and was discharged apparently well about one and a half months after admission. Two and a half months later he was still well, but continuing the urotropin.

Two cases of a disease liable to remissions, such as general paralysis, are not sufficient to build much upon, but the extraordinary progress reported under the influence of the drug, together with the fact that bacterial toxins generated in the body are strongly believed by Ford Robertson and others to play a great part in the pathogenesis of the disease, should encourage a trial of urotropin in all suitable cases, especially as it seems to be free from risk if given in moderate doses. The supervention of hæmaturia in the second case, however, would suggest a tentative administration.

Ergot and Arsenic in Chorea.—Eustace Smith nearly two years ago urged the advantage of ergot in cases of chorea, but C. Riviere (*B. M. J.*, Vol. I., 1905, p. 354) has found that although about 50 per cent. of cases could be cured by this means, some even became worse, while others were unchanged. Many of the latter, however, improved when arsenic was substituted, and it occurred to Riviere to combine the two drugs. He gives a mixture containing doses of ʒi of liquid extract of ergot and ♏iii of liquor arsenicalis, increasing the quantities as may seem desirable, and has found, during about a year's experience, that few cases remain without benefit from this treatment. An important point is that this experience has been largely gained amongst out-patients.

LITERARY NOTE.

We understand that, during the year 1904, 15,090 copies of Gould's Medical Dictionaries, published by P. Blakiston's Son & Company, of 1012 Walnut Street, Philadelphia, Pa., were sold, making the total sales to date 181,173.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—SIR THORNLEY STOKER, M.D., F.R.C.S.I.
General Secretary—JAMES CRAIG, M.D., F.R.C.P.I.

SECTION OF SURGERY.

President—ARTHUR CHANCE, P.R.C.S.I.
Sectional Secretary—EDWARD H. TAYLOR, M.D., F.R.C.S.I.

Friday, January 13, 1905.

G. JAMESON JOHNSTON, F.R.C.S.I., in the Chair.

Exhibits.

MR. MAUNSELL exhibited a patient upon whom he had operated for acute cholecystitis, and subsequently for gangrenous appendicitis; also a gall-bladder removed for phlegmonous cholecystitis, and another for hydrops.

MR. C. ARTHUR BALL exhibited—(*a*) prostate removed by perineal prostatectomy, (*b*) prostate and calculi removed by conservative perineal prostatectomy.

Cholecystotomy for Acute Cholecystitis following Typhoid Fever.

MR. MAUNSELL read a paper entitled "Cholecystotomy for Acute Cholecystitis following Typhoid Fever." The cholecystitis manifested itself on the 27th day after the patient's admission to Mercer's Hospital. The muco-pus removed from the gall-bladder contained a pure culture of Eberth's bacillus as proved by numerous tests. Mr. Maunsell briefly described the affections of the gall-bladder which may complicate enteric fever, and strongly advocated operative treatment, quoting cases and statistics in support of his contention.

Surgical Complications of Typhoid Fever.

Mr. Jameson Johnston related two cases of typhoid fever in which complications had arisen calling for surgical intervention. In one there was necrosis of the laryngeal cartilages, and in the other there was a chronic abscess of bone, and in both typhoid bacilli were found in the pus.

Sir Charles Ball had seen many cases in which disease of bone had occurred many months after typhoid fever. He related a case also in which, during the acute stage of the fever, a large abscess developed in the upper lobe of the lung.

Dr. Finny considered that the question of interest in Mr. Maunsell's case was whether the acute cholecystitis was a complication of the acute fever or a *sequela*. These complications were to be expected, not in the height of the fever, but just when the patient seemed to be getting better. He did not think typhoid bacilli were the sole cause of the complication in the present case, as they are often found in great numbers in the gall-bladder without any results, locally or otherwise, in the neighbourhood. Mr. Maunsell's patient first came under observation on account of a septic finger, and it was just possible that septic organisms were associated subsequently with the typhoid bacilli.

Mr. Maunsell, in reply, stated that in looking up the literature of the subject he had noted instances of complications arising fourteen and a half years after typhoid fever, and in which pure cultures of the typhoid bacillus were obtained. He had thought of the possibility of the crushed finger having had something to do with this case, but on very careful examination no septic organisms could be found.

Conservative Perineal Prostatectomy.

Mr. C. Arthur Ball introduced this subject by referring to the methods of prostatectomy as usually performed by the suprapubic or perineal route, which he considered could not be regarded as ideal surgical procedures, for the prostate had to be removed largely by the sense of touch ; hæmorrhage during these operations was not fully under control ; and the amount of injury inflicted on the bladder, urethra, and ejaculatory ducts was frequently considerable. He said the question we had to decide was—Can the prostate, or rather a sufficient part of the prostate, be removed so as to cure the patient without inflicting permanent injury to important anatomical structures? Perineal prostatectomy, as performed by Dr. Young of the Johns Hopkins' Hospital, seemed to him to fulfil these conditions more fully than the methods previously advocated. He then proceeded to explain Young's operation of conservative perineal prostatectomy, illustrating the various steps of the operation by means of lantern slides, showing that the lateral and median portions of the prostate could be removed without injuring the mucous membrane of the bladder or the urethra and ejaculatory ducts, a matter of some importance now that prostatectomy is being done in younger men.

Mr. Jameson Johnston stated that he had always performed the suprapubic operation, and still thought it the right one. He did not think there were such things as lobes in enlarged prostate; the prostate was simply adenomatous, and there was no definite lobar arrangement. The ingenious idea of Lane's operation was to be admired—viz., the preservation of the ejaculatory ducts.

Mr. Edward H. Taylor stated that he had had the privilege of being present at Mr. Ball's prostatectomy operations. He had previously no experience of the perineal method, but had performed the suprapubic operation, and was much impressed in its favour. It was not very difficult, but left much to be desired, as one had to work largely by the sense of touch. He was impressed by the ease with which the prostate could be exposed by means of a curved incision in front of the anus, the facility with which the capsule could be peeled off the lateral lobes, and the large veins of the vesico-prostatic plexus avoided. Against the operation was the fact that it entailed an extensive dissection and division of the compressor urethræ muscle. There was considerable risk therefore of injuring the sphincteric apparatus of the bladder, and of subsequent incontinence of urine. There was much less risk of incontinence with the suprapubic operation.

Mr. Maunsell thought it was a mistake to say that all cases should be done either by the suprapubic or by the perineal operation. His experience was only with the former, because in his cases the prostatic enlargement was very marked. He would not think of removing a large adenomatous prostate through the perineum, and would employ the perineal operation only for prostates of small size. The speed with which it could be performed was in favour of suprapubic prostatectomy, and this was a point of importance with elderly patients.

Mr. Lentaigne said he had often thought that a better method than the suprapubic in prostatectomy could be devised, but he was not yet converted to the perineal route; it was much more likely to lead to septic troubles than the suprapubic, as there was much more division of tissues.

Sir Thomas Myles said he did not quite understand what became of the mucous membrane of the bladder which covered the upward bulging portions of the prostate. Was it torn in parts or was it removed *en bloc?* Was the ideal method to leave an intact urethra and an intact bladder? He described the method by which he had carried out the perineal operation. In his opinion, if the bladder mucous membrane covering the prostate had to be divided at all it had better be cleanly removed, otherwise a ragged surface was left and pieces of the mucous membrane might subsequently obstruct the urethra.

Mr. Stoney stated that, viewing prostatectomy from the anatomical standpoint, the best method was that which aimed at removing the prostate from within the bladder. In the perineal operation the prostatic capsule was divided and the pelvic cellular tissue was exposed to septic influences.

Mr. Ball, in reply, said he had not intended to deal with the question as to which of the two operations of prostatectomy was the better. The mortality after the perineal operation was less than half that following the suprapubic, which fact alone would tend to make one employ the perineal route. Although in many cases suprapubic prostatectomy could be done with rapidity, yet this was by no means always the case. Also, he thought drainage was better by the perineal tnan by the suprapubic route. In conservative perineal prostatectomy the mucous membrane of the bladder over the prostatic lobes was supposed to be left intact.

SECTION OF OBSTETRICS.

President—A. J. Smith, M.B., F.R.C.S.I.
Sectional Secretary—T. Henry Wilson, F.R.C.P.I.

Friday, February 3, 1905.

The President in the Chair.

Specimens.

Dr. Alfred J. Smith showed a rare specimen—a large physometric uterus. The patient was delivered early in last October of twins (at the 6th month), both dead, and beginning to decompose. On the fourth day after delivery she had a severe rigor, with temperature of 106° F. Her local doctor washed out the uterus with a weak corrosive sublimate solution. Notwithstanding this her condition went from bad to worse. On admission to St. Vincent's Gynæcological Department she was in evident distress from distension—Temp. 102.6°; pulse, 120. Examination under ether was unsatisfactory, as nothing could be mapped out. The diagnosis was not made until the abdomen was opened. The numerous discoloured gangrenous-looking patches which were demonstrated influenced the decision in favour of removal. A hysterectomy was performed, fortunately without rupture. Examination of the contents was postponed, as Dr. Smith wished to show the large uterus in its distended condition. Uninterrupted recovery.

Dr. Kidd wished to know how the gas had been kept in the specimen? The only similar case he had seen was an accumulation of gas inside a gestation sac. The patient came into hospital three months pregnant, with symptoms of threatened abortion. The symptoms abated, and she went out. He saw her again when she was thirteen months pregnant. The whole of the front of the abdomen was perfectly dull. A rectal examination was made, and next day her temperature was 104°, and the abdomen very resonant. An operation was performed, and it was found that there had been a primary rupture into the layers of the broad ligament, and the gestation sac had gone on developing. There was an escape of very offensive gas on the sac being opened. The patient made a good recovery, and had had two children since. The only explanation he had for the formation of the gas was that the *Bacillus coli communis* had got into the gastation sac on account of the rectal examination.

Dr. Purefoy said that most of them had seen the condition termed physometric in connection with malignant disease, or in cases of delayed or neglected labour, where air had got into the uterus. Dr. Smith's case was remarkable on account of the gas having remained in the uterine cavity.

Dr. E. H. Tweedy showed an ovarian cyst.

Two Cases of Cystic Endometritis, with remarks on Treatment.

Dr. Purefoy read a paper on this subject.

Dr. Hastings Tweedy said that cystic endometritis was a disease he did not know personally, and of which he could find no account. He objected to fresh nomenclature, and thought they should stick to the term glandular. His objection to the term "cystic" was that it did not lead anyone to a knowledge of what one was dealing with, whilst "glandular" did. The question of treatment was more interesting. A few years ago every case was curetted, but of late there had been a reaction against this, and many now preferred to use intra-uterine douches, caustics, &c. He protested against this, and believed that in his study practice the surgeon had little right, and rarely necessity, to pass anything into the uterus. It was impossible to be aseptic in study practice. The vast majority of cases of endometritis, especially the hypertrophic form, were cured by one cleanly curetting. He left his cases alone after curetting, and did not use medications subsequently. He washed out the debris with salt solution, and did not use antiseptics, which devitalised the tissues, and the less the uterus was irritated with them the better. He could not understand the rationale of taking in a patient every third day to inject iodised phenol after curetting—it seemed to him unnecessary and dangerous. The less often the uterus was entered the better. There was a certain amount of danger in putting anything into it, and if good results were obtained without caustics, why apply them ? The term "Benign Adenoma" is misleading, as it implies growth accompanied by increase in the number of glands, and all such growths of the endometrium will prove in practice to be malignant.

The President said he divided endometritis into glandular and interstitial. There were two kinds of glandular—hyperplastic and hypertrophic. Hyperplastic was adenoma, and in it there was an enormous increase in the number of glands : hypertrophic had a normal number of glands, but greatly increased and distended, and these when occluded formed cysts. The hyperplastic frequently became malignant, therefore these cases had to be seen often, and the uterus removed. The hypertrophic might be merely distended tubes or, if seen late, cysts. The treatment was to mechanically remove the mucous membrane and try to cultivate a healthy mucous membrane. Try to find out the cause of the endometritis. His practice was to curette and wash out once, and wash out again on the third and fourth day to see that nothing was left behind. He used hot sterilised saline solution, and did not employ any intra-uterine medications.

DR. PUREFOY, in replying, said he thought it was of importance for them to study the pathology of these conditions for themselves, and if systematic examination were made in every case good practical results would follow. With regard to the objection to giving the condition a special name, he could not agree with Dr. Tweedy. The condition was one of considerable rarity, and most of the manuals did not allude to it at all. He believed that the condition was not a very advanced stage of glandular endometritis. He did not know what caused it, but thought that if it had been at all common, he would have met with more than two cases of it. The term cystic endometritis was employed in two classes of cases—in gynæcological cases, where the patients were not pregnant, and also as implying a diseased condition of the endometrium occurring in pregnant women. His cases occurred in women apart from pregnancy. The epithelium in the dilated glands was not in the atrophied condition one would expect it would be in from pressure: it was intact. He believed the condition was very rare. With regard to subsequent treatment, he thought it was in the patient's interest to use a mild caustic four or five days after curetting, and its subsequent use was to be determined by the amount of discharge, condition of cervix, character of first menstruation, &c.

Observations on Bossi's Dilator, with Notes of Four Cases.

DR. ALFRED J. SMITH read a paper on this subject. [It will be found at page 262.]

DR. KIDD said that one disadvantage of Bossi's dilator had been met by changing the number of blades from four to eight, thus having eight points of pressure on the lower zone of the uterus, and less probability of rupture. An advantage of Bossi was that one could watch digitally the amount of tension between the four blades, which was hardly possible when eight blades were introduced. Another objection was that the angle at which the dilator was set to the shaft was not the angle at which dilatation would take place. Seigneux tried to meet this objection in his dilator, but it had its disadvantages also. There was too much resiliency in the lateral blades, and in order to try and gain the advantages of having eight blades one had to change the blades and insert blades with broader flanges, and this was a very troublesome proceeding. He was quite sure that where mechanical dilatation was used for placenta prævia the risks of laceration were greatly increased. He certainly thought that its use in eclampsia would give happy results.

Dr. FitzGibbon said he had used Bossi's dilator in a case in which he had induced labour at seven and a half months. He started by using bougies, but the uterus took on no action, and they were introduced again the day following. The membranes had then ruptured, and the following morning he decided to dilate the cervix, into which he could introduce two fingers. He dilated up to 7 cms. He did not intend to complete delivery, and left the patient, having put some gauze in the cervix. Labour set in in three hours, and she was delivered three hours afterwards. He considered that labour had been induced by mechanical dilatation, which started uterine action.

Dr. Hastings Tweedy said he could hardly think that dilators had been responsible for the salvation of even one woman. Medical papers now-a-days teemed with the praises of mechanical dilatation of the cervix in the treatment of eclampsia. He had treated within the last fifteen months ten cases of puerperal convulsions in the Rotunda Hospital with one death; in this case the diagnosis of eclampsia was doubtful. In a large number of these, it was observed that convulsions became severe after the birth of the child, so that the emptying of the uterus could not be considered a save-all and cure-all. In but one of the successful cases was delivery accelerated even by forceps, in the others labour was allowed to go on naturally, and finish. These results show that recovery will take place even though violent means to extract the fœtus are not adopted. As to the dilator's usefulness in *ante-partum* hæmorrhage, due to placenta prævia, he must dissent from the views of those who recommended its employment; in such cases the cervix often tears without one being conscious of the fact. The treatment could never compare favourably with the plan of bringing down the leg and leaving the case to nature. The cervical epithelium is bruised during the process of forcible dilatation, and such bruising predisposes to sepsis.

There was one class of case in which he thought the dilator was sure to be applied—" rigid os," but its use in such cases was also sure to be repented of. Bossi himself counted the condition as a contrary indication. Seigneux's instrument appeared to have some slight advantage over the other dilators; but if one desired to open the cervix it could easily be accomplished by any one of the lacerating instruments at present on the market.

DR. PUREFOY said that the range of utility of a dilator was not at all as wide as they had been led to believe. The utmost caution was necessary in its use, and the cervix was often found lacerated without it having been noticed. In cases of eclampsia it might sometimes be of use, but the number of cases was very small. It was useful in cases where labour had started and the pains had come on and afterwards stopped.

THE PRESIDENT, in replying, said he had tried the dilator, having heard and read so much about it. He thought that it was in places like Dublin that the principles of new inventions should be tested, as they had to report on them to country practitioners. As to its use in eclampsia, he thought that certain cases would get well no matter what form of treatment was used.

SECTION OF STATE MEDICINE.

President—SIR JOHN W. MOORE, M.D.
Sectional Secretary—F. C. MARTLEY, M.D.

Friday, February 10, 1905.

THE PRESIDENT in the Chair.

Earth-Temperature and Diarrhœal Diseases in Dublin during 1904.

THE PRESIDENT read a paper on this topic. Having quoted the late Dr. Edward Ballard's views on the relation between a critical temperature of 56° F. at 4 feet below the surface of the ground and an epidemic mortality from diarrhœal diseases in late summer and early autumn, the author of the paper submitted and explained two diagrams showing a comparison between the death-curve from diarrhœal diseases in the Dublin Registration Area during the summer and autumn of 1904 and the earth-temperature records from the Normal Climatological Station which was established within the precincts of the University of Dublin by the Provost and Senior Fellows of Trinity College on January 1,

1904. The diagrams show that in 1904 diarrhœal mortality was trifling till the week ended August 6—that is, the third week after the subsoil temperature at 4 feet had passed above 56° F. The mortality increased week by week, until 35 deaths from diarrhœal diseases were registered in the week ended August 27—that is, about 10 per cent. of all the deaths from those diseases (339) registered in the course of the whole year 1904. This maximum of mortality followed the maximum of warmth of the soil at 4 feet (58.5° F.) by an interval of just a fortnight. Such a coincidence is at least remarkable, and may be turned to practical account as a warning that diarrhœal diseases are about to become rife whenever the earth thermometer at 4 feet rises to 56°.

DR. KIRKPATRICK said that the chief interest and value of the observations was to give an indication of the onset of these attacks of summer diarrhœa in children to the authorities, who could then take precautionary measures, and give timely warning of its approach. This was possible, owing to the interval which elapsed between the rise of the earth-temperature to the critical line of 56° and the incidence of the diarrhœa. He did not think there was sufficient evidence to show that the rise of the temperature to the critical line and the summer diarrhœa were connected causally. It was more probable that the earth-temperature reached a certain height only during conditions when epidemic diarrhœa was liable to arise also, and there was probably an organism which could develop when the earth-temperature had been a sufficient height for a certain length of time. This was borne out by the fact that the mortality from summer diarrhœa was much less amongst breast-fed than bottle-fed children, and everyone knew the difficulty of giving bottle-fed children even moderately sterile food. There could be no doubt that this epidemic diarrhœa was started by the introduction of poisonous food into children, and it was probably caused by organisms capable of producing decomposition in food stuffs, and not by any specific bacillus. He hoped that active measures would be taken next year to prevent the onset of summer diarrhœa and warning given in time to take due precautions.

DR. CRAIG was sure that Sir John Moore did not mean to convey that the earth-temperature alone caused this epidemic diarrhœa. It was only lately that physicians had recognised that this very fatal affection was due to micro-organisms. He thought that the heightened temperature tended to increase putrefaction, and that flies had a great deal to do with carrying the infection. People who were careful with regard to their food were rarely affected with summer diarrhœa. He thought that children used often to be affected through the state of the bottles themselves.

DR. M'VITTIE said he would like to have an explanation of the statement that diarrhœal diseases were more markedly on the increase in those districts where the houses were closely built than where there was an excess of population. This would indicate that the earth-temperature could not be the main factor, because a large portion of earth covered by closely-built houses could not rise to the same temperature as places where there was a lot of open space between the houses. Closely-built houses maintained a more equable earth-temperature in summer and winter. Therefore there must be a number of other factors in the causation of these diseases, such as increase of fruit supply, &c. Another factor was that young people in cities became exhausted at that time of year, and their capacities for mastering those diseases were lowered. Small children played much in the sun, got into heats, and then got chilled.

DR. LANGFORD SYMES thought that those who suggested that there was a multiple series of factors producing those diseases held the correct view. These diseases seemed to destroy more children than adults, and, perhaps, a milk diet accounted for that. We seemed to be more exempt from them in Ireland than in other places, such as New York, where the infant death-rate was much higher. The climate here seemed to minimise them, there being no great difference between the summer and winter temperatures in Dublin. The earth-temperature certainly seemed to have a great deal to do with the development of the organisms which caused the diseases and predicts their onset. As to food, it was found by Holt that this factor greatly influenced their onset amongst infants. The ground had recently been gone over again in America by bacteriologists, and they had come to the conclusion that not only the earth-temperature, but also food, had a good deal to say to their causation. Again, Holt had noticed in his series seven cases of breast-fed infants who had also got water from the tap without boiling, and the seven had died; therefore the diseases might be water borne. Another factor was sanitation, and indeed these diseases used to be taken as a sanitary index. With regard to infection, light had been recently thrown on this question by Shiga in Japan, who had found a bacillus which gave the Widal and Pfeiffer reactions with blood serum, and which he considered to be the specific bacillus of the diseases. It was called the *Bacillus dysenteriæ* of Shiga. Besides this bacillus there was also the Flexner-Harris type, which was found principally in the mucous portions of the stools, and in scrapings from the mucosa after death. An acid medium was necessary for their growth, and we know that many children's foods developed acidity, which might account for their ready growth. A serum had been made from horses, and injected in these cases, but it had not proved to have much value. He thought that Dr. Craig had struck a good note in referring to flies, insects, &c., as a means of conveying serious infection.

Dr. Matson asked Sir John Moore if he thought that the nature of the ground had anything to do with those diseases. He himself, whilst in a London hospital, had seen a severe epidemic, and had gone from that to Hampshire, where a similar epidemic occurred. The soils in the two places were very different. The following year, whilst in Las Palmas, where the temperature was 80° to 85°, he asked a doctor there what his experience of those diseases was. He told him that he had never seen them in children nursed by their mothers, whilst there was a considerable amount of fatal diarrhœa amongst older children who were liable to infection from fruit, garbage, &c.

Dr. Winter said that Sir John spoke of a heavy rainfall seeming to have been followed by a decline in the death-rate. While in England, twelve years ago, he himself had had occasion to examine the reports on the Tees Valley epidemic of enteric fever, and a heavy rainfall there was followed by a great increase in the number of cases. If these two facts were correct, he would say that enteric was water borne, and these diarrhœal diseases were not water borne, but were carried through the air, contaminating the food.

Dr. Ninian Falkiner said he would like to call attention to the nomenclature of these so-called diarrhœal diseases. Some years ago statisticians found a number of cases returned as gastro-enteritis, enteritis, and muco-enteritis, and it soon became evident that these terms were loosely used. A special committee was appointed, the net result of whose labours was that these three divisions were all placed amongst the local diseases of the digestive system.

Sir John Moore, in replying to Dr. Kirkpatrick, said that last year the observations had actually been used to give warning of the onset of diarrhœal diseases. He had been careful in his paper not to commit himself to the view that the earth-temperature was the absolute cause of these diseases, but he said there was a remarkable coincidence. He agreed that various organisms might cause the diarrhœa. A very interesting point was that the symptoms were referable to poisoning of the centres in the medulla oblongata. He also agreed with Dr. Craig as to the mischief caused by flies, and thought that this was very far-reaching. He believed that small-pox infection had often been carried by them. He could not quite agree with Dr. M'Vittie that the mere placing of houses over the soil would very materially interfere with the rise of the subsoil temperature. With regard to Dr. Symes' observations, he said that everyone agreed that food was of extreme importance. As to the nature of the soil it was certain that clayey soil always warmed up more slowly than gravel or sand, so that diarrhœal diseases might be expected earlier in the latter case. With regard to what Dr. Winter had said, he thought that the mortality had been checked last year by heavy rains, this fact telling in favour of contamination by dust or flies.

Sicily as a Winter Health Resort.

A short paper on "Sicily as a Winter Health Resort" was then communicated by **Dr. Parlato**, of Palermo. [It will be found at page 194.]

SECTION OF PATHOLOGY.

President—H. C. Earl, M.D., F.R.C.P.I.

Sectional Secretary—A. H. White, F.R.C.S.I.

Friday, February 17, 1905.

The President in the Chair.

Exhibits.

Mr. E. H. Taylor exhibited specimens, removed by operations, of (1) a benign tumour of the mammary gland of unusual development; (2) malignant growth in cæcum; and (3) a malignant stricture of the large intestine (Pelvic Colon).

Cirrhosis of Liver (Non-alcoholic.)

Dr. Peacocke showed a liver which was a well-marked example of atrophic or multilobular cirrhosis. He had obtained it from a young married woman, aged 30, who had been a total abstainer all her life. There was no syphilitic history, and no apparent cause for the condition could be discovered. The duration of her illness was five months, ascites being first discovered three months before death. She had never had any gastric symptoms.

The President said that the connection between alcoholic excess and cirrhosis of the liver had been assumed, and partly proved, but he thought that too much importance was placed on the alcoholic excess. In quite half the cases he had seen there was certainly none. It was hard to say whether there was syphilis or not, but at any rate it was impossible to get a history of it. He had seen cases of typical cirrhosis in very young people—for example, in a child of seven and in a child of eleven. It was quite obvious that there was something else besides alcoholic excess, because one found patients in hospital who drank all they could get, and had no cirrhosis, and it was by no means a common affection among them.

Dr. Matson asked if there was any tubercular history, or whether any tubercular foci existed in any part of the body? Also, was there any enlargement of the spleen, and how soon after the draining did the patient die? In view of acute yellow atrophy could the pregnancy throw any light on the causation? As regards alcohol producing cirrhosis, he wondered if the kind of alcohol made any difference, as in England it was usually whisky or brandy that was drunk, and in Ireland, stout.

Professor O'Sullivan said that his own experience coincided with that of the President. One made *post-mortem* examinations on numbers of drunkards in this city, and fatty infiltration of the liver was usually found, while cirrhosis of the liver was the exception; and he was inclined to agree with Dr. Matson that it might be due to the kind of spirit consumed. At the same time in experimental cirrhosis the disposition of the animal appeared to exercise a certain amount of influence on the result—that is, some animals of the same species would get cirrhosis, and others would not, as if there was a tendency in some individuals to the formation of increased connective tissue. One ought not to forget the interesting work that was being done in Montreal by Professor Adami, on the effect of organisms of low virulence acting for a long time on the organs. We remembered that there was an announcement made that cirrhosis of the liver was due to an extremely minute coccus, but this was subsequently corrected, as it was found that it was a form taken by the colon bacillus. Adami and his pupils believed that many of the chronic interstitial changes in the body are due to micro organisms of low virulence, no matter what the specific nature is.

Colonel McNeece said that during the last 15 years he had made many *post-mortem* examinations but had never seen a case of cirrhosis of the liver. The cases which did occur at Netley were in men who had served 15 years in India. Formerly each man was served out with a dram of rum in the morning (and many men besides bought more drink), but that had been done away with for the last 12 years or so, and now they saw nothing of the hobnailed liver in the service, so that he thought it was due to a sort of crude alcohol manufactured in India from beet root. He had read the accounts of the investigations in Canada, and it might have something to do with the case before them—of cirrhosis occurring in a strictly temperate person.

Dr. Kirkpatrick asked if Dr. Peacocke could give them any explanation of the occurrence of ascites in these cases of cirrhosis of the liver? The teaching they had had was that the fibrous tissue pressed on the portal veins and caused a very chronic form of ascites. Now, it seemed that many cases ran almost their whole course without any ascites appearing; also that in those cases where it did appear it was a terminal symptom. A few years ago a few cases were collected together to show the results of Talma's operation, and these seemed to show that it gave bad results in cases of cirrhosis of the liver, but in cases due to perihepatitis it had given brilliant results, so that he thought the old explanation—that the ascites was due to mechanical obstruction—could no longer be supported, and he believed that it was a terminal symptom. Whether the cirrhosis started primarily as a result of change in the liver cells or as a result of an irritant reaching the connective tissue in the portal systems through the blood-vessels, it did not seem to him that that could afford a full explanation of the symptoms. A patient would go on for a considerable time without any symptoms, then, more or less suddenly, he began to lose flesh and present symptoms of loss of vitality; ascites supervened, and death resulted in a short time. If the symptoms were due to a crowding out of the liver cells by connective tissue, one would expect the process to be more gradual; and if this crowding out of the liver cells was to be a full explanation, then surely the ascites ought to be an early symptom and last for a long time; but in many cases we found that it occurred as a terminal symptom. Could Dr. Peacocke give any explanation of the mode of onset?

Dr. Peacocke, replying, said that anyone who had experience of *post-mortem* examinations knew that cirrhosis of the liver occurred in cases without any alcoholic history, and *vice versâ*. In this case he had got no tubercular history. The *post-mortem* was limited, but they saw no tubercular foci. The spleen was, perhaps, slightly enlarged. The ascites was first noticed early in August. The patient came into hospital on the 24th of August, and died on the 25th of November, and it was a day or two after the 4th tapping that she died. He thought that in those cases where ascites occurred shortly after tapping, obstruction of the portal vein occurred.

Infective Endocarditis.

Dr. Peacocke exhibited specimens from a man aged forty-eight, who had died from infective endocarditis, the duration of his illness being about six months. Infarcts were present in the lungs, spleen, and kidneys. In the brain there were three distinct hæmorrhagic infarcts, one in the inferior frontal convolution, another in the region of the temporo-sphenoidal convolutions, and another in the occipital lobe, all on the right side. He suffered for two months before his death from aphasia — word deafness. Vegetations were present on the tricuspid, mitral and aortic valves, and on the endocardial surface of the left ventricle and auricle. No aortic murmur was audible during life. No micro-organisms were found in the blood.

Dr. Kirkpatrick asked what micro-organism was isolated from the specimen.

Dr. Peacocke, in reply, said that there was none isolated.

Perforation of the Aortic Valve.

Dr. Travers Smith exhibited a specimen showing perforation and aneurysm of an aortic valve.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by the EDITOR.

VITAL STATISTICS.

For four weeks ending Saturday, February 25, 1905.

IRELAND.

TWENTY-TWO TOWN DISTRICTS.

THE average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending February 25, 1905, in the Dublin Registration Area and the twenty-one principal provincial Urban Districts of Ireland was 24.8 per 1,000 of their aggregate population, which for the purposes of these returns is estimated at 1,093,959. The deaths registered in each of the four weeks ended Saturday, February 25, and during the whole of that period in the several districts, alphabetically arranged, correspond to the following annual rates per 1,000:—

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	Feb. 4	Feb. 11	Feb. 18	Feb. 25			Feb. 4	Feb. 11	Feb. 18	Feb. 25	
22 Town Districts	21.8	24.0	22.3	24.8	23.2	Lisburn -	4.5	27.3	13.6	9.1	13.6
Armagh -	20.6	34.4	27.5	34.4	29.2	Londonderry	22.3	19.8	14.9	26.0	20.8
Ballymena	23.9	19.2	9.6	14.4	16.8	Lurgan -	13.3	44.3	44.3	26.6	32.1
Belfast -	17.9	24.0	22.1	24.7	22.2	Newry -	12.6	16.8	4.2	25.2	14.7
Clonmel -	10.3	5.1	5.1	76.9	24.3	Newtownards	34.3	34.3	45.8	45.8	40.0
Cork -	32.9	27.4	24.0	27.4	27.9	Portadown	46.5	25.8	36.2	15.5	31.0
Drogheda -	32.7	8.2	28.6	28.6	24.5	Queenstown	6.6	13.2	46.1	13.2	19.8
Dublin (Reg. Area) -	24.2	25.2	23.5	25.5	24.6	Sligo -	28.8	14.4	4.8	4.8	13.2
Dundalk -	23.9	16.0	23.9	8.0	18.0	Tralee -	26.4	47.6	15.9	5.3	23.8
Galway -	—	69.9	27.2	27.2	31.1	Waterford	19.5	11.7	17.5	17.5	16.6
Kilkenny -	34.3	9.8	19.7	34.3	24.5	Wexford -	18.7	18.7	14.0	18.7	17.5
Limerick -	19.1	12.3	19.1	21.9	18.1						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases, registered in the 22 districts during the week ended Saturday, February 25, 1905, were equal to an annual rate of 1.3 per 1,000, the rates varying from 0.0 in fifteen of the districts to 11.4 in Newtownards—the 8 deaths from all causes in that district including 2 from diarrhœal diseases. Among the 170 deaths from all causes in Belfast are 8 from measles, one from scarlet fever, one from diphtheria, 2 from enteric fever, and one from diarrhœa ; and the 40 deaths from all causes in Cork include one from measles, one from diphtheria, and one from diarrhœa.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The populution of this area is 378,994, that of the City being 293,385, Rathmines 33,203, Pembroke 26,025, Blackrock 8,759, and Kingstown 17,622.

In the Dublin Registration Area the births registered during the week ended February 25 amounted to 200—96 boys and 104 girls ; and the deaths to 194—94 males and 100 females.

DEATHS.

The deaths registered represent an annual rate of mortality of 26.7 in every 1,000 of the population. Omitting the deaths (numbering 9) of persons admitted into public institutions from localities outside the area, the rate was 25.5 per 1,000. During the four weeks ending with Saturday, February 25, the death-rate averaged 25.1, and was 5.1 below the mean rate for the corresponding portions of the ten years 1895-1904.

The deaths which were registered during the week ended February 25 include 3 from measles. In the 3 preceding weeks the deaths registered from measles were 5, 0, and 2, respectively. Whooping-cough and epidemic diarrhœa each caused one death, and 4 deaths from influenza were registered. Not one death from small-pox, scarlet fever, typhus, diphtheria, or enteric fever was registered.

Lobar pneumonia caused one death, broncho-pneumonia caused 7 deaths, and *pneumonia* (not defined) caused 6 deaths.

Of the deaths (49) from tuberculous disease 7 were attributed to tubercular phthisis, 28 to *phthisis*, 8 to tubercular meningitis, and 6 deaths to other forms of the disease.

One death from carcinoma, one death from sarcoma, and 3 deaths from *cancer* (undefined) were registered.

The deaths of two infants prematurely born were registered.

The 14 deaths from diseases of the brain and nervous system include the deaths of 8 children under 5 years of age from *convulsions*.

Diseases of the heart and blood-vessels caused the deaths of 27 persons.

Bronchitis accounted for the deaths of 22 persons.

Of 2 accidental deaths registered, one was caused by injuries on a railway, and one by accidental burns, the latter being that of a child aged 6 years.

In 13 instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases include the deaths of 7 children under 5 years of age (including 6 infants under one year old) and the deaths of 4 persons aged 60 years and upwards.

Sixty-six of the persons whose deaths were registered were under 5 years of age (43 being infants under one year, of whom 15 were under one month old), and 47 were aged 60 years and upwards, including 24 persons aged 70 and upwards, of whom 13 were octogenarians.

The Registrar-General points out that the names of the cause of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

The usual returns of the number of cases of infectious diseases notified under the "Infectious Diseases (Notification) Act, 1899," as set forth in the following table, have been furnished by Sir Charles A. Cameron, C.B., M.D., Medical Superintendent Officer of Health for the City of Dublin; Mr. Fawcett, Executive Sanitary Officer for Rathmines and Rathgar Urban District; Mr. Manly, Executive Sanitary Officer for Pembroke Urban District; Mr. Heron, Executive Sanitary Officer for Blackrock Urban District; Dr. Byrne Power, Medical Superintendent Officer of Health for Kingstown Urban District; and Dr. Whitaker, Medical Superintendent Officer of Health for the City of Belfast.

TABLE SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfast, during the week ended February 25, 1905, and during each of the preceding three weeks. An asterisk (*) denotes that the disease in question is not notifiable in the District.

CITIES AND URBAN DISTRICTS	Week ending	Small-pox	Measles	Rubella, or Epidemic Rose Rash	Scarlet Fever	Typhus	Relapsing Fever	Diphtheria	Membranous Croup	Continued Fever	Typhoid or Enteric Fever	Erysipelas	Puerperal Fever	Varicella	Whooping-cough	Cerebro-spinal Meningitis	Total
City of Dublin	Feb. 4	–	*	*	9	–	–	5	–	1	12	16	–	*	*	*	43
	Feb. 11	–	*	*	2	–	–	8	–	1	8	12	1	*	*	*	32
	Feb. 18	–	*	*	7	–	–	6	–	2	6	15	–	*	*	*	30
	Feb. 25	–	*	*	2	–	–	4	–	1	3	14	–	*	*	*	24
Rathmines and Rathgar Urban District	Feb. 4	–	*	*	1	–	–	1	–	–	2	–	–	*	*	*	4
	Feb. 11	–	*	*	1	–	–	–	–	–	2	–	–	*	*	*	3
	Feb. 18	–	*	*	–	–	–	–	–	–	–	–	–	*	*	*	–
	Feb. 25	–	*	*	–	–	–	–	–	–	–	1	–	*	*	*	1
Pembroke Urban District	Feb. 4	–	3	–	–	–	–	1	–	–	1	–	–	*	–	–	5
	Feb. 11	–	–	–	–	–	–	3	–	1	–	1	–	*	1	–	6
	Feb. 18	–	2	–	2	–	–	1	–	–	–	–	–	*	2	–	7
	Feb. 25	–	–	–	–	–	–	–	–	–	–	–	–	*	–	–	–
Blackrock Urban District	Feb. 4	–	*	*	–	–	–	–	–	–	–	–	–	*	*	*	–
	Feb. 11	–	*	*	–	–	–	–	–	–	–	–	–	*	*	*	–
	Feb. 18	–	*	*	–	–	–	–	–	–	–	–	–	*	*	*	–
	Feb. 25	–	*	*	–	–	–	–	–	–	–	–	–	*	*	*	–
Kingstown Urban District	Feb. 4	–	*	*	1	–	–	–	–	–	–	–	–	*	*	*	1
	Feb. 11	–	*	*	2	–	–	–	–	–	1	–	–	*	*	*	3
	Feb. 18	–	*	*	–	–	–	–	–	–	–	–	–	*	*	*	–
	Feb. 25	–	*	*	4	–	–	–	–	–	–	–	–	*	*	*	4
City of Belfast	Feb. 4	2	*	*	15	–	–	12	2	12	4	6	2	*	*	*	55
	Feb. 11	–	*	*	12	–	–	6	–	3	7	10	2	*	*	*	40
	Feb. 18	–	*	*	6	–	–	11	–	18	5	10	–	*	*	*	50
	Feb. 25	3	*	*	3	–	–	2	–	5	2	4	1	*	*	*	20

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

Twenty-four cases of measles were admitted to hospital during the week ended Saturday, February 25, 1905, 17 were discharged. There was one death, and 45 patients remained under treatment at its close.

Six cases of scarlet fever were admitted to hospital, 5 were discharged, and 53 cases remained under treatment at the close of the week. This number does not include 17 convalescents from scarlatina who remained under treatment at Beneavin, the Convalescent Home of Cork Street Fever Hospital, Dublin.

One case of typhus fever remained under treatment at the close of the week.

Two cases of diphtheria were discharged from hospital, and 21 cases remained under treatment at the close of the week.

Three cases of enteric fever were admitted to hospital, 6 were discharged, and 41 cases remained under treatment in hospital at the close of the week.

In addition to the above-named diseases, 9 cases of pneumonia were admitted to hospital, 8 patients were discharged, and 26 cases remained under treatment at the end of the week.

ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, February 25, in 76 large English towns, including London (in which the rate was 16.0), was equal to an average annual death-rate of 15.7 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 18.3 per 1,000, the rate for Glasgow being 17.8, and for Edinburgh 15.8.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ *N., Long.* 6° 15′ *W., for the Month of February,* 1905.

Mean Height of Barometer,	30.160 inches
Maximal Height of Barometer (21st, at 9 a.m.),	30.659 „
Minimal Height of Barometer (26th, at 9 p.m.),	28.937 „
Mean Dry-bulb Temperature,	42.4°.
Mean Wet-bulb Temperature,	40.1°.
Mean Dew-point Temperature,	37.3°.
Mean Elastic Force (Tension) of Aquoeus Vapour	.225 inch.
Mean Humidity,	82.6 per cent.
Highest Temperature in Shade (on 18th),	55.8°.
Lowest Temperature in Shade (on 20th),	32.0°.
Lowest Temperature on Grass (Radiation) (20th),	29.3°.
Mean amount of Cloud,	58.0 per cent.
Rainfall (on 12 days),	.750 inch.
Greatest Daily Rainfall (on 25th),	.220 „
General Directions of Wind,	W., S.W., N.W.

Remarks.

Like January, its predecessor, February was signalised by a high atmospheric pressure, and also by a high temperature for the time of year. Pressure was .305 inch above the normal, and no less than .670 inch above the value for February, 1904. The mean temperature also was 1.1° in excess, and 2.9° above that of last February, which was a cold month. These *plus* values would have been much more marked had not a cold spell set in on Saturday, the 18th, lasting to the end of the month, while a deep atmospheric depression brought the barometer down to 28.937 inches on the evening of the 26th, so reducing the excessive pressure of the month taken as a whole. The amount of cloud was relatively small, and sunshine was in excess.

The duration of bright sunshine was estimated at 97 hours, or a daily average of 3.5 hours, compared with 79.25 hours, or a daily average of 2.8 hours in 1902, 63.5 hours, or a daily average of 2.3 hours in 1903, and only 43.0 hours, or a daily average of 1.5 hours in 1904.

In Dublin the mean temperature (43.6°) was 1.1° above the average (42.5°). The mean dry-bulb readings at 9 a.m. and 9 p.m. were 42.4°. In the forty years ending with 1904, February was coldest in 1895 (M. T. = 34.2°), and warmest in 1869 (M. T. = 46.7°) and in 1903 (M. T. = 47.5°). In 1901 the M. T. was 39.2°; in 1902, 39.3°; in 1903, 47.5°; and in 1904, 40.7°.

The mean height of the barometer was 30.160 inches, or 0.305 inch above the average value for February—namely, 29.855 inches. The mercury rose to 30.659 inches at 9 a.m. of the 21st, and fell to 28.937 inches at 9 p.m. of the 26th. The observed range of atmospheric pressure was, therefore, 1.722 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 42.4°, or 0.2° below the value for January, 1905. Using the formula, *Mean Temp.* = *Min.* + (*Max.* — *Min.* × .50), the M. T. is 43.6°, compared with a thirty years' (1871–1900) average of 42.5°. On the 18th the thermometer in the screen rose to 55.8°—wind, W.S.W.; on the 20th it fell to 32.0°—wind, W.N.W. The minimum on the grass was 29.3°—also on the 20th.

The rainfall was .750 inch, distributed over 12 days. The average rainfall for February in the thirty-five years, 1866–1900, inclusive, was 1.990 inches, and the average number of rainy days was 16. The rainfall, therefore, and the rainy days were much below the average. In 1883 the rainfall in February was large—3.752 inches on 17 days; in 1879 also 3.706 inches fell on 23 days. On the other hand, in 1891, only .042 inch was measured on but 2 days. In 1904, 3.312 inches fell on 17 days.

The atmosphere was foggy on the 7th and 24th. The amount of cloud—58.0 per cent.—was considerably below the average—66 per cent. At 9 p.m. it was only 55.9 per cent. High winds were noted on 10 days, and reached the force of a gale on 5 days—namely, the 1st, 18th, 19th, 26th, and 27th. Hail fell on the 19th, 26th, and 27th. Snow or sleet fell on the 19th, 22nd, and 27th. Lunar halos were seen on the 12th and 14th. A partial eclipse of the moon was well seen on the evening of the 19th.

The temperature reached or exceeded 50° in the screen on 10 days, and it fell to or below 32° on only one night, compared with as many as 18 nights in 1895. The minima on the grass were 32° or less on 10 nights, compared with every night in 1895. The thermometer never failed to rise to 40° in the screen. The highest minimum was 47.1° on the 9th.

In Dublin the rainfall up to February 28th, 1905, amounted to 2.647 inches on 26 days, compared with 5.735 inches on 50 days in 1900, 3.872 inches on 29 days in 1901, 3.362 inches on 22 days in 1902, 5.503 inches on 35 days in 1903, 5.847 inches on 36 days in 1904, and a thirty-five years' (1866–1900) average of 4.220 inches on 34 days.

At the Normal Climatological Station in Trinity College, Dublin, the observer, Mr. Maurice S. Moore, reports that the mean height of the barometer was 30.160 inches, the highest reading observed being 30.653 inches at 9 a.m. of the 21st, the lowest, 28.935 inches at 9 p.m. of the 26th. The mean temperature was 43.8°, the mean dry-bulb reading at 9 a.m. and 9 p.m. being 43.0°. Rain fell on 13 days to the amount of .687 inch, .173 inch being measured on the 25th. The number of hours of bright sunshine registered by the Campbell-Stokes sunshine recorder was 84.9, giving a daily average of 3.0 hours. The corresponding figures for February, 1904, were 37.25 hours and 1.28 hours. The mean temperature of the soil at a depth of one foot was 42.3° at 9 a.m.; at a depth of 4 feet, it was 44.2° at 9 a.m.

The rainfall at Leeson Park, Dublin, is given by Dr. C. Joynt, F.R.C.P.I., as .775 inch on 11 days, .220 inch having been measured on the 25th.

At Cork, according to Mr. W. Miller, rain fell on 16 days to the amount of 1.42 inches, or 2.02 inches below the average for February. The heaviest fall in 24 hours was .61 inch on the 25th.

The rainfall of the first two months of 1905 has been 4.88 inches on 34 days.

At the Ordnance Survey Office, Phœnix Park, the rainfall was .900 inch on 16 days, the maximal measurement in 24 hours being .210 inch on the 25th.

At White Cross, Stillorgan, Co. Dublin, .832 inch of rain fell on 14 days, .280 inch being measured on the 25th and .172 inch on the 6th. Since January 1, the rainfall equals 3.210 inches on 25 days.

Dr. Arthur S. Goff reports that at Lynton, Dundrum, Co. Dublin, rain fell on 12 days to the amount of 1.07 inches, the greatest daily fall being .43 inch on the 25th. In February, 1901, the rainfall was 1.55 inches on 10 days; in 1902, it was 2.76 inches on 11 days; in 1903, it was 2.95 inches on 15 days, and in 1904, 4.05 inches on 21 days. The temperature in the shade ranged from 54° on the 16th and 18th to 32° on the 20th. The mean temperature in the screen was 43.6°, compared with 39.0° in 1902, 47.1° in 1903, and 40.4° in 1904.

Mr. R. Cathcart Dobbs, J.P., reports that at Knockdolian, Greystones, Co. Wicklow, the rainfall was only .650 inch on 9 days. The heaviest fall in 24 hours was .250 inch on the 25th. In February, 1900, the rainfall was 6.670 inches on 20 days; in 1901, 1.385 inches on 11 days; in 1902, 2.590 inches on 8 days; in 1903, 2.870 inches on 14 days; and in 1904, 2.957 inches on 19 days. The total fall to February 28th, 1905, inclusive, was 1.655 inches on 20 days, compared with 5.692 inches on 36 days in 1904, 6.170 inches on 29 days in 1903, 4.450 inches on 17 days in 1902, 5.420 inches on 27 days in 1901, 10.436 inches on 44 days in 1900, 8.610 inches on 42 days in 1899, 3.980 inches on 29 days in 1898, 5.190 inches on 37 days in 1897, and only 1.940 inches on but 17 days in 1896.

The rainfall at Cloneevin, Killiney, Co. Dublin, as observed by Mr. Robert O'B. Furlong, C.B., amounted to .79 inch on 14 days, compared with 2.35 inches on 12 days in 1902, 2.08 inches on 14 days in 1903, and 3.56 inches on 20 days in 1904. The average rainfall for February during 20 years, 1885–1904, at this station is 1.891 inches on 14 days. The greatest rainfall in 24 hours was .28 inch on the 25th. Since January 1 the rainfall was 3.08 inches on 26 days, compared with 5.98 inches on 37 days in 1904, 4.90 inches on 35 days in 1903, 3.97 inches on 24 days in 1902, 4.39 inches on 28 days in 1901, 7.23 inches on 48 days in 1900, 6.28 inches on 36 days in 1899, 3.32 inches on 29 days in 1898, 4.31 inches on 38 days in 1897, and 1.64 inches on 19 days in 1896.

Dr. B. H. Steede reports that the rainfall at the Royal National Hospital for Consumption, Newcastle, Co. Wicklow, was .848 inch on 10 days, compared with 1.296 inches on 11 days in 1901, 2.923 inches on 10 days in 1902, 3.096 inches on 16 days in 1903, and 4.408 inches on 24 days in 1904. The maximal fall in 24 hours was .360 inch on the 25th. Up to February 28th, the rainfall at Newcastle amounted to 2.175 inches on 21 days, compared with 4.837 inches on 25 days in the corresponding period of 1901, 4.589 inches on 22 days in 1902, 7.416 inches on 35 days in 1903, and 7.718 inches on 42 days in 1904. At this Second Order Station the screened thermometers fell to 32.9° on the 17th, having risen to 57.0° on the 18th.

From the Railway Hotel, Recess, Connemara, Co. Galway, Mr. A. A. Smith reports that the rainfall was 3.119 inches on 17 days, compared with 7.710 inches on 23 days in 1904, 5.890 inches on 22 days in 1903, 3.196 inches on 12 days in 1902, and only 1.748 inches on 11 days in 1901. The maximal fall in 24 hours was .790 inch on the 26th. The month was generally stormy.

Dr. J. Byrne Power, F.R. Met. Soc., Medical Superintendent Officer of Health, Kingstown, reports that the mean temperature at that health resort was 44.5°, being 2.3° above the average for the month during the previous 7 years, the extremes being—highest, 56.7° on the 18th; lowest, 32.5° on the 20th. At Bournemouth the mean was 43.5°, the extremes being—highest, 55° on the 15th; lowest, 31° on the 20th. The mean daily range of temperature was 6.6°; at Bournemouth it was 10°. The mean temperature of the sea at Sandycove bathing-place, was 42.9°, being 0.2° above the average for the month during the previous 7 years. The mean relative humidity was 76.5 per cent., being 2 per cent below the average for the month during the previous 4 years. The rainfall at Kingstown was 0.71 inch on 13 days, being 1.58 inches below the average for the month during 15 previous years (1873–83) and (1901–04); at Bournemouth it was 0.84 inches on 9 days. The total duration of bright sunshine at Kingstown was 106.8 hours, being as much as 57.3 hours above the average for the month during the previous 4 years, as compared with 96.9 hours at Ordnance Survey Office, Phœnix Park, 76.5 hours at Valentia, 87.5 hours at Parsonstown, 89.2 hours at Southport, 89.4 hours at Hastings, and 93 hours at Bournemouth.

PERISCOPE.

THE INTERNATIONAL CONGRESS, LISBON, 1906.

A MEETING of the National Committee for Great Britain and Ireland of the Fifteenth International Congress, to be held at Lisbon from April 19th to 26th, 1906, took place in the rooms of the Medical Society of London on 3rd February, 1905. There were present, amongst others—Dr. F. W. Pavy, F.R.S., President of the National Committee; Sir W. S. Church, K.C.B., Bart.; Sir Dyce Duckworth, M.D.; Dr. Ferrier, F.R.S.; Dr. Gordon Dill; Dr. Radcliffe Crocker; Dr. Boyd Joll; Mr. W. H. H. Jessop; and the Honorary Secretaries, Dr. Clive Riviere and Mr. D'Arcy Power. It was announced that the following gentlemen had undertaken to act as "Rapporteurs" at the forthcoming Congress, as it was the wish of the Lisbon Committee to make the "rapports" a special feature of the meeting. The subject in each case had been chosen by the Lisbon Committee:—Dr. Stanley B. Atkinson, Barrister-at-Law, and Hon. Secretary of the Medico-Legal Society, "Spontaneous and Criminal Abortion in its Medico-Legal Aspect;" Dr. Chalmers, Medical Officer of Health for the City of Glasgow, "The Administrative Control and Technique of Public Disinfection;" Mr. Treacher Collins, F.R.C.S. Eng., "Ocular Tuberculosis;" Prof. Ferrier, F.R.S., "The Nature and Pathological Physiology of Tabes;" Mr. Goadby, Lecturer on Bacteriology at the Dental Hospital, London, "The Treatment of Pyorrhœa Alveolaris;" Dr Gulland, "The Classification, Origin, and Probable Role of Leucocytes, Mastzellen and Plasma Cells;" Dr. Mott, F.R.S., "Cerebral Lessons in Psychoses of Toxic Origin;" Mr. D'Arcy Power, F.R.C.S. Eng., "Recent Advances in the Surgery of the Arteries and Veins;" Dr. Still, "The Spastic Affections of Childhood, their Classification and Pathogeny;" Dr. Sutherland, Deputy Commissioner in Lunacy for Scotland, "The Prophylaxis and Treatment of Habitual Criminals;" Mr. C. E. West, F.R.C.S. Eng., "A Study of the Eleptogenous Action of Foreign Bodies in the Ear and of Postnasal Growths." Sir Patrick Manson, K.C.M.G., had undertaken to open a conference upon some subject connected with Tropical Medicine. A letter was read from Messrs. Thomas Cook

& Son offering to provide a first-class passenger ship to convey visitors to and from Lisbon, calling at Corunna, Vigo, and Oporto, and acting as a floating hotel during the Congress week; the whole trip to London and back taking eighteen days, and at an inclusive charge. The suggestion was approved by the Committee, but Messrs. Cook were desired to ascertain the exact position in the Tagus at which anchorage would be allowed, that inquiries might be made locally as to its suitability both from the point of view of the hygienic surroundings and of the distance from the seat of the Congress meetings. Letters were read from Dr. Ogilvy Will, of Aberdeen, and Dr. J. F. Sutherland, of Edinburgh, giving the results of inquiries which had been made in regard to the housing of those who did not go by sea, or who would not remain on the boat whilst at Lisbon. It appeared from these inquiries that rooms would be very difficult to obtain, but there were still some to be had at a moderate rate at Cintra, which is about forty minutes by train from Lisbon. The proprietor of Nunes' hotel says that, at present, he has 16 bedrooms, most of which can be used by two persons. It appears imperative therefore that those who intend to go to the Congress, and do not wish to depend on the efforts of the local Committee to obtain lodgings, should at once take the opportunity of securing rooms. Delay is likely to lead to the same disastrous consequences as at Madrid.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

"*Lock and Key*" *Poison Bottle.*

THE lamentable death of Lieut. T. N. F. Davenport, of the Royal Irish Rifles, through misadventure by taking carbolic acid instead of his medicine on Friday, March 3, 1905, has led Messrs. Thomas Christy & Company, of Old Swan Lane, Upper Thames Street, London, E.C., to draw attention to a "lock and key" bottle which they are now introducing with the view of preventing the occurrence of similar mistakes in future. The firm named propose to supply this "lock and key" bottle, of a capacity of twelve fluid ounces and graduated, containing the usual quantity of carbolic acid used for disinfecting purposes at the price hitherto charged for an ordinary bottle of the same size. They are also supplying empty poison bottles with a nickel-plated patent automatic lock and key for locking up any given poison.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XV.—*Intra-muscular Injection of Mercury in the Treatment of Syphilis.* By HENRY FITZGIBBON, M.D., F.R.C.S.I.; Senior Surgeon to the Government Westmoreland Lock Hospital.

IN 1902, owing to the favourable reports of Surgeon F. J. Lambkin, A.M.S., of this method of treating syphilis among soldiers, I gave it what I then thought to be a fair trial in the Westmoreland Hospital, using two preparations which were kindly procured for me by Surgeon Lambkin; one was a soluble, and the other an insoluble, preparation of mercury, for which the following are the formulæ :—

℞. Sodii iodidi - - -	gr. 10
Hydrarg. sozoidal - -	gr. 5
Aquæ - - - -	♏cc.

Dose : ♏x as an injection three times weekly.

℞. Hydrargyri - - -	ʒi
Lanolin pur. - - -	ʒi
Olei olivæ - - -	ʒii

Dose : ♏v to ♏x once a week.

I found the injection of the first of these preparations occasioned so much local pain at the time, and for several hours afterwards, that the patients very soon refused to submit to the repetition of so painful a process. On the other hand, the injection of the insoluble preparation, known as "Lang's cream," was not attended by any local pain beyond that of the mere needle puncture at the time, but in a large proportion of cases, some days after, inflammatory swellings, and sometimes abscess, occurred at the site of the injection.

The operation was performed with the strictest surgical cleanliness, and with the same kind of syringe in using both preparations. It was, therefore, quite clear to me that it was something in the cream that was at fault which caused these inflammations, and not any want of asepsis in the manner in which it was used.

In consequence of the pain caused by the soluble injection, and the risk of consecutive inflammation and abscess after the use of the insoluble injection, I had to abandon the treatment after a few weeks' trial at the time I refer to.

Since the recent publication of Colonel Lambkin's admirable little book on the Treatment of Syphilis in the Army by the intra-muscular injection of mercury, I have again reverted to this method in the treatment of a considerable number of patients, both in my private practice and in the Government Westmoreland Lock Hospital. Although it is too soon to be able to say what the ultimate results will be in these cases, it may be interesting to publish the particulars of some of them as far as they have gone, and to describe the mode in which I now carry out the details of the treatment, by careful attention to which it is deprived altogether of the objections which obliged me to give it up before. The preparation which I am now using is a modification of Lang's cream, the formula for which is given by Colonel Lambkin in his book, and it has the obvious advantage over the original cream of being rendered antiseptic by the use of a 2 per cent. carbolised parolein instead of olive oil in its composition, which is as follows:—

℞. Hydrarg.	ʒi
Lanolin anhydrosi	ʒiv
Parolein carbol. 2 per cent.	ʒi

The maximum dose in acute cases of syphilis is min. x. once a week, which is the equivalent of gr. i of mercury. The dose in continuous treatment is min. v once a week, or, at longer intervals, at the discretion of the administrator.

In order to carry out the treatment without risk of misadventure there are two points of paramount importance which demand special care and attention. First, to be sure that the cream has been properly compounded and carefully preserved from deterioration or decomposition from exposure to the atmosphere or other influence which might contaminate it. Second, to the quality of the cream used, but in no way less essential to the success of the treatment, comes the manner in which the doses are administered.

With reference to the first point, Colonel Lambkin calls special attention to the care with which the lanolin and mercury must be blended together prior to the addition of the carbolised oil or parolein. This is a very troublesome and tedious process, and can be accomplished only by long-continued trituration in small quantities in a glass mortar, by or under the personal supervision of some trustworthy person. Too much care cannot be taken in the trituration of the mercury and lanolin. When prepared it has hitherto been dispensed in suitable well-stoppered bottles; but even when properly compounded and dispensed in this manner there is a risk, owing to the changes of temperature, of the mercury separating and gravitating to the bottom of the bottle; besides which, each time the bottle is opened for use there is a possibility of its contents becoming contaminated from the atmosphere. The cream which I have been using has been compounded for me by Messrs. Price & Co., of 26 Clare Street, under the personal supervision of the head of the establishment, and is perfectly satisfactory. At first I obtained it in wide-mouthed stopper bottles in quantities of not more than an ounce at a time, but I found considerable difficulty, particularly when it became low in the bottle, in drawing it up into the syringe, and the process of charging the syringe was not only difficult but dirty, and attended by waste, and it was impossible to avoid having a large bubble of air intervening between the end of the glass piston and the cream, which, unless completely expelled before the injection is made, constitutes, in my opinion, a grave source of danger. In order to obviate the foregoing objections I suggested to Messrs. Price & Co. to dispense the cream in glass tubes containing min. xx. or min. xxx. in each tube, with a cork plug at each end. The plug at one end is driven home flush with the extremity of the tube, while the cork at the opposite end is allowed to project sufficiently to enable it to be withdrawn when the cream is about to be used. The cork at the opposite end is then pushed down by means of a small glass rod of suitable length, supplied for the purpose, and the contents of the tube are discharged into the cylinder of the syringe in the mannerhereafter described. Messrs. Price & Co. now supply these tubes under the registered name of "Jectols" in boxes of a dozen or more as required, each box containing a suitable glass rod to be used as a piston in the manner I have indicated. I have found that these "Jectols" not only afford a cleanly and expeditious means of charging the syringe, but also prevent the risk of air being retained in the cylinder. Mode of making the injections:—The gluteal or deltoid muscles afford the most convenient sites, and the skin, at the point where the injection is about to be made, should be thoroughly cleansed and well scrubbed beforehand with ether or absolute alcohol. The syringe used must be all glass, as it is impossible to ensure that a syringe with any packing on the piston is perfectly sterilised. The needles should be platino-iridium of a specially large calibre, as the ordinary needles for hypodermic injection will not transmit the cream owing to its thickness. The syringe should be separated and sterilised by boiling, and the needles sterilised by being held in the flame of a spirit lamp after each injection, until any cream remaining from the previous injection is thoroughly burnt out, after which the wire should be passed through to clear away any debris, and then a little alcohol squirted through to make sure that it is free. The syringe must be charged before the needle is attached, and if it is done by drawing the cream from a bottle great care must be taken to expel the bubble of air, which it invariably contains when filled in this manner, before the injection is made. Whenever they can be obtained it is much easier and safer to fill the syringe from a "Jectol," which is done in the following manner:—The plug for attaching the needle having been removed, the syringe is held in the left hand with the glass piston drawn back, and the cork having been withdrawn from one end of the "Jectol," the cork plug at the other end is pushed down with the glass rod so as to transfer the cream into the syringe. This is easily accomplished with the right hand while the syringe is held vertical in the left. When charged in this way there is no air in the syringe between the cream and the piston, and the air which is necessarily in it is all at the distil end, and is expelled directly as soon as the plug is replaced. The recently sterilised needle is then attached and the instrument is ready for use.

It is important the moment the needle is withdrawn that a piece of lint or muslin, soaked in absolute alcohol, should be placed on the puncture, and the part massaged for a few seconds so as to extravasate the cream through the muscular tissue at once, otherwise some of it may leak back along the needle track into the subcutaneous tissue or even escape through the puncture in the skin. Finally, the puncture should be sealed by applying a little celloidin or friar's balsam before being allowed to come into contact with the patient's clothes.

I have now done a very large number of injections with the precautions and in the manner I have described, and in no single instance has there been any local inconvenience or trouble whatever when I have followed this method. I do not think too much stress can be laid upon the importance of safeguarding against the possibility of any admixture of air with the injection. One of the objections raised to the treatment has been the supposed occurrence of embolism. If any symptoms at all resembling this accident have occurred, of which I have no knowledge, I think it is much more probable that they were due to the introduction of some minute air bubbles into the venous circulation than to anything else.

In conclusion, I will give a few concise notes of cases which illustrate that by this method of administering mercury its beneficial effects in syphilis can be obtained as rapidly, if not more so, than when either taken by the mouth or by inunctions, and with a minimum amount of inconvenience to the patients.

Case I.—Mr. J. St. G.—A chronic syphilitic, suffering from large eroding serpiginous gummy ulcer on leg. Commenced treatment on January 19, 1905, with injection of min. x = Hg.

gr. 1. This dose was repeated at intervals of seven days until February 10th, when the ulcer had begun to heal at the margins and had a healthy granulating surface. The dose was reduced to min. 7½ and two skin grafts were planted in the centre of the ulcer. On February 17th the ulcer was rapidly healing, and one graft had done well and was throwing out new skin towards the margin of the ulcer. The dose was reduced to min. v = Hg. gr. ½. This dose has been repeated at intervals of seven days. The ulcer was quite healed after the eighth injection. The patient is still under treatment, but is quite well and leading an active life at a laborious occupation.

CASE II.—Mr. S. A.—A chronic syphilitic, returned recently from India, where he had undergone treatment by inunction. Commenced intra-muscular treatment on January 20, 1905, with min. x = gr. 1 Hg. This dose was repeated only twice at intervals of seven days, when I reduced it to min. v. at intervals of ten days. This patient has had 8 injections, is in excellent health, leading an active out-door life, hunting several times a week, and is still under treatment.

CASE III.—Mrs. B. W.—A chronic syphilitic, suffering from serpiginous gummy ulcers, with plaques of elevated neoplasms on chest, where former gummy ulcers had been. This patient commenced intra-muscular treatment on January 24, 1905, with min. 7½, which was not repeated until February 3rd, owing to a hunting accident. She was again given min. 7½. Since then she has had doses of min. v. regularly at intervals of seven days. After the sixth injection the ulcers were all healed. She is continuing the treatment, from which she has suffered no inconvenience, having hunted regularly three or four times a week all the time.

CASE IV.—Mr. C. T.—Suffering from acute complete syphilis, contracted three months previously, for which he had not yet been treated. He presented a typical hard chancre, multiple inguinal and nuchal adenitis, condylomata, and papular syphilides over his body. He commenced intra-muscular treatment on March 2nd with min. v. = Hg. gr. ½. This dose has been repeated regularly at intervals of seven days. He has had six doses only, and is now free from any discoverable sign of syphilis.

CASE V.—Mr. A. W.—Suffering from well-marked hard sore, resulting from infection five weeks previously. Given first intra-muscular injection March 17th, min. v. Dose repeated 24th, 31st, and April 7th. Sore began to heal after second injection; was healing rapidly on April 7th, and no constitutional symptoms have yet appeared beyond the local induration, which is retrograding.

I could multiply cases, but the foregoing are sufficient to illustrate the effect which may be expected from this method of treatment, both in chronic syphilis and in recently infected patients.

ART. XVI.—*Suprapubic Cystotomy in Children.* By CHARLES GREENE CUMSTON, M.D.; Surgeon to the Boston Floating Hospital for Children; Honorary Member of the Surgical Society of Belgium; Member of the American Urological Association; Corresponding Member of the Urological Association of France, &c., &c., Boston, Mass.

IN considering the subject of suprapubic cystotomy in children it may be well to briefly outline a few considerations relative to the anatomy of the bladder in young subjects, but I have no intention of studying this organ in any detail. All authorities seem to consider that in children the bladder is, so to speak, an abdominal organ; this disposition is merely the result of its development, as we know that it is the pedicle of the allantoid. The small dimensions of the pelvis, all diameters of which are only slightly developed, and the slight elevation of the symphysis pubis only exaggerate this situation. Consequently the greater part of the anterior aspect of the bladder and nearly its entire body are to be found above the pubis. Barkow is most categorical regarding this subject, and according to him the bladder is situated in the abdomen up to the time of puberty. Although less affirmative, Delbet has published a drawing in which the preceding opinion is well demonstrated, and Takahasi, followed by Testut, only confirm Barkow's opinion. This abdominal situation of the viscus is to be remembered. Compressed and applied against the wall by the intestinal coils, the bladder becomes flattened. The urachus pulls upon its upper pole, and it is to these different causes that its oval and very elongated aspect is due, and later on its great oblique diameter extending downward and backward. It consequently possesses a very distinct anterior and posterior surface, and it is not oval, with four surfaces, as it is later in the abdomen. Delbet insists upon this point, which he says he has distinctly met with in frozen bodies, and states that the cavity of these oval bladders continues almost without transition directly with the urethral cavity. The prostate is only slightly developed at this age, and the slanting of the bladder surface is quite sufficient to explain this anatomical disposition. This situation occupied by the bladder changes its relationships; those of the anterior aspect alone are of interest as far as the subject of this paper is concerned. It has a larger surface of contact with the anterior abdominal wall, and this renders the relationship of the bladder and the rectum less intimate. The peritoneum becomes normally reflected on the anterior wall of the bladder, and the exact knowledge of the point at which the serosa of the bladder forms the cul-de-sac is of capital importance. Various means have been employed by anatomists to give reliable data upon this subject, and in the adult it usually is about 4 centimetres back, and in the latter this should be remembered, but wounding it in the child is more or less exceptional. Since the bladder normally extends above the os pubis it is easy to understand that the point where the peritoneum becomes reflected will naturally be higher up, and in children it has been my experience that whether the bladder is filled or emptied the peritoneum never goes down towards the pubic bone. When the bladder is distended the peritoneum stops at least three centimeters from the upper border of the os pubis, and Pitha believed that this point of reflexion was still higher up; according to him the peritoneal cul-de-sac is situated from 1½ to 2 centimeters above the umbilicus up to the age of eight years. Ballantyne seems to partially adopt Pitha's conclusions, but he believes that from the age of twelve years on, when the organ becomes completely pelvic, the pre-vesical cul-de-sac takes on the same conditions as in adults. If it is rarely wounded during suprapubic cystotomy it is because the peritoneum is not very adherent to the urinary reservoir, and it is easily detached and pushed back by the operator's finger. We may, consequently, conclude that in children the surgeon will hardly be able to wound the peritoneum during the operation of suprapubic cystotomy, and this fact explains the great success which the older surgeons met with when they undertook this operation.

On the posterior aspect of the bladder the peritoneum extends lower than in the adult, and it even covers the lower part of the prostate. The serous membrane is easily opened during recto-vesical or perineal cystotomy, and this is one of the great inconveniences of these methods and the principal cause of post-operative peritonitis observed after these operations. Another important point is the slight extent of the pre-vesical space. This space, whose importance in the adult is well known, both surgically and pathologically, is not so in children. The bladder, in direct contact with the abdominal wall and against the posterior aspect of the os pubis, partially fills it, and for this reason very little fat is to be found, but nevertheless it should always be carefully drained as in adults.

Then, again, the vascular supply differs in children; the arteries are smaller, but follow the same course as in adults; the veins are still less developed, and it is well known that the plexus of Santorini is extremely reduced in children. The periprostatic plexus is rudimentary, and the entire venous system takes on its development only at the commencement of puberty, to acquire later on that considerable importance which it possesses in old age. We may consequently conclude that in children the anatomical situation of the bladder singularly facilitates its access by the suprapubic route, that on account of its shape it does not possess a fundus in which calculi can collect, and that, because of the poor vascular supply of its walls, hæmorrhage need never be feared as a complication.

The frequency of vesical calculi in children is well known, and it is hardly necessary to say that the two extremes of life are the times when one is most subject to the development of stone. Poor children, the aged rich—such is the classical formula.

In young children it would seem well demonstrated that the uric acid diathesis has no very great influence on the production of calculi, and out of 144 cases of stone in the bladder in children, Guersant was unable to find a single instance in which the father had been the subject of calculi. All things taken into consideration, it would appear that vesical calculi are due to bad hygiene and an alimentation too exclusively vegetable to suit the needs of children. However this may be, nothing is more variable than the symptoms which indicate the presence of calculi in them. Beside those cases where the presence of stone is badly supported and is indicated by intense functional phenomena, there are other instances where the affection undergoes its evolution in a most insidious way, and frequently patients are operated on as late as the 20th year who have carried their calculus about with them ever since infancy. The infrequency of hæmaturia, in spite of the violent exercises indulged in by children, is quite remarkable, although the reason for this is not known, but perhaps the poor vascular supply of the bladder at this time of life may account for it. The symptoms observed are frequently attributed to reflex phenomena supposed to be due to a marked degree of phimosis with incontinence of urine, which is frequently noted in these cases, and is considered as a primary incontinence. In a word, all absolute symptomatic indications are wanting in most cases, but I would particularly point out that incontinence of urine is of capital importance, and if, after proper medical treatment, it continues the bladder should be explored with a sound.

When once a calculus has been discovered the question arises whether or not the case should be treated medically, because some few observers have upheld that occasionally it will give brilliant results, but I hardly think that the common sense of the average medical man will allow his patient to receive anything but a proper curative treatment, the only rational one of which is surgical.

The indications for surgical treatment leave little in the way of discussion, because the early advent of functional troubles, and especially more serious lesions, will render all hesitation impossible. Some authorities have considered that a very young age is a contra-indication, but statistics show that this is not the case, and every calculus when once diagnosticated should be operated as early as possible.

Relative to the choice of the technique, we would in the first place group those operations which allow the removal of the stone by an artificial opening, namely, the cystotomies; in the second group we would place operations by the natural passages, namely, lithotomy; and we will now rapidly compare these two methods in order to consider more in detail the question of suprapubic cystotomy.

The characteristic of the various forms of cystotomy is the artificial route followed in order to extract the stone, and many are the techniques that have been advocated in the last few hundred years. They may be classified, according to the route followed, into perineal, recto-vesical and suprapubic cystotomy. Of the second nothing need be said because of the frightful mortality to which it gave rise.

Perineal cystotomy still finds a little favour among a few surgeons, and we owe in the past a great many successful results to it, and, in truth, not so very long ago it was the method of choice. The simplicity of the interference, the ease which one could reach the bladder by this route, the slight hæmorrhage and the resulting natural drainage were the reasons why this operation was in vogue. It certainly is resorted to at the present time by numerous surgeons practising in the Orient, namely, at Bombay by Bainbridge, Harris in Bengal, and many others. These operators, following the example of the ancient surgeons, perform a lateral cystotomy. The convalescence is more simple, and the young Oriental subjects on which these operations are done are said to get up on the same day that the operation has been performed. In order to render this manner of operating legitimate in the eyes of the profession these surgeons have published their statistics, which are the most recent and most complete relative to this question. Mayet united them in his thesis published a few years ago, and they certainly are favourable for the operation of perineal cystotomy before antisepsis rendered the suprapubic route without danger. Summing up the statistics of fourteen surgeons, who have operated by this route, we find that out of 1,634 cases in subjects varying in age from 1 to 17 years old, there were 75 deaths, in other words, a mortality of 4.58 per cent. If to this figure we add that of median cystotomy, we come to the following result as regards the various forms of perineal cystotomy, namely, 1,649 cases with 87 deaths, in other words, 4.7 per cent. Such are the figures with which statistics furnish us.

Although the mortality of perineal cystotomy is small, this operation has a very serious disadvantage, namely, section of the ejaculatory canals, and this accident alone, which is almost inevitable, is quite enough to throw the operation into disrepute. In 1894, St. Germain recommended lateral cystotomy, which would at least allow the vas deferens to escape injury; bi-lateral cystotomy, which cuts through both, is very good for large sized calculi, but is not as practical, and, consequently, should be given up.

There is an occurrence which arises, namely, that the genital gland becomes atrophied when the vas deferens is cut, and, consequently, impotence and atrophy of the testicle are two factors, practically inseparable, of the bi-lateral operation. Guersant affirms that in eight cases of death that occurred from the perineal operation in his practice he found at autopsy that he had wounded the ejaculatory canals. Other surgeons are so affirmative that they even go so far as to say that these canals become choked up by the cicatricial tissue, which brings about the same result as if they had been cut. Beside this argument, which in itself is quite sufficient to cause the operation to be given up, others may be mentioned. In order to reach the calculus by this route one is working in the dark, and although hæmorrhage is not to be greatly feared in children on account of the poor development of erectile tissue, the immediate neighbourhood of the rectum is extremely dangerous. Guersant, out of 100 operations, had three recto-vesical fistulæ, and several other surgeons have had to deplore similar results. The bladder, which one endeavours to avoid, will be sometimes opened to a considerable extent and tearing of the retro-vesical peritoneal cul-de-sac was also frequent. The above-mentioned authority lost for this reason 8 per cent. of his patients, "all having an inflammation of the cellular tissue of the pelvis, starting from the neck of the bladder and extending to the abdominal peritoneum, the pathologic changes in which were found at autopsy." Then, again, it may happen that the perineal wound will not close, and the result is a stubborn urinary fistula. And, lastly, let me mention an absolute contraindication for the perineal route, namely, a very large calculus which would cause serious injury to the soft structures during its extraction. One may consequently conclude that, at the present time, perineal cystotomy has been given up with good reason, although some few surgeons still resort to it.

A word now as to lithotrity. Suggested for the first time by Civiale for calculi in children, it was considered a very dangerous proceeding. The defects in the instruments at that time, and the ease with which the perineal operation could be done, caused the former operation to be abandoned. In 1838, after much progress had been made in the construction of instruments for this operation, a number of surgeons again resorted to it with success, but, in spite of all this, the perineal operation still remained for some time the method of choice. For the older operators lithotrity presented a serious inconvenience, because if the calculus was of any size three or four séances became necessary in order to completely break it up. The duration of these interventions was only from four to five minutes, but during the interval a permanent catheter had to be inserted, which was tolerated with difficulty by the little patients. Frequently, also, the size of the fragments prevented their exit and the permanent catheter, which was impossible to keep in place, did not prevent the pieces becoming lodged in the urethra. The strong contractions of the bladder and the absence of a fundus facilitated this forced expulsion; the fragments would go through the neck, which became dilated with ease, but lodged in the membranous portion of the urethra. When this occurred the fragment could not be pushed back into the bladder, and one was obliged to either crush it in the urethra or proceed to its extraction with appropriate instruments, while occasionally it had to be removed by external urethrotomy.

In spite of the real progress made in the new method the insufficiency of the instrumentation rendered lithotrity delicate and possible for only a few operators. The roughened surface and small projections of the fragments played the part of foreign bodies and produced traumatisms and serious inflammatory lesions of the vesical mucosa. And still more, the perineal operation, like lithotrity, performed without any antiseptic care, also became complicated by serious infections, while cystitis and nephritis were well known and feared by all surgeons.

Bigelow, in 1878, by a plucky innovation, made lithotrity diverge from the path in which it was progressing in a slow and quiet gait. Removing the calculus from the bladder at a single sitting, he at the same time did away with the many disadvantages due to the presence of the fragments. His method was received with enthusiasm, and it was applied in all parts of the world. Its application for the removal of stone in children was soon undertaken by Bigelow himself, followed shortly afterwards in France by Guyon. The proceeding became generalised to such an extent that from 1881 to 1896, 1,062 cases in subjects varying from 1 to 16 years of age were done, with a mortality of 2.7 per cent. In spite of such reassuring figures surgeons did not become convinced, and it appears that at the present time litholapaxy in children is practically forgotten. Its contra-indications are about the same as those we formulated for lithotrity by Civiale's method, the principle one being the size of the stone.

The various ways of estimating the exact size of a calculus are extremely elastic. The metallic searcher may give some indications as to its size but not its shape, and rectal examination, combined with abdominal palpation, is extremely useful. The bladder thus becomes pushed forward, and the abdominal hand may obtain very useful indications as to the existence of the calculus, but of very little precision relative to its size. The lithotrite is the only instrument giving any exact appreciation, and it is with this instrument, with the child fully under the influence of an anæsthetic, that an exact exploration of the bladder should be undertaken. By this means, better than in any other way, one can ascertain whether or not the stone can be crushed, but in the case of children the instrument used is usually of such small dimensions that it can be employed for crushing only small calculi. Sir Henry Thompson has pointed out that a child's urethra, between the ages of three to eight years, is extremely small, and that it is precisely during this period of life that 50 per cent. of the cases of calculi in children will occur. In order to crush a stone at this age it is consequently necessary to use a very small lithotrite, and therefore only small calculi can be attacked, for the very simple reason that the jaws of the instrument are very short, and can seize only a very small stone. He also goes on to say that, if this operation is resorted to, the urethra should, in the first place, be dilated, and with the pelvis elevated a calculus not larger than a good sized pea may be crushed and evacuated in a single sitting, care being taken to completely crush it. When more than two sittings appear necessary, the advantage of lithotrity becomes doubtful.

Harrison, who studied the question of the indications of lithotrity in children, comes to the same conclusions as Thompson, and, according to his way of thinking, calculi which are not larger than ⅜″ in their greatest diameter are the only ones that can be attacked by this method, and, consequently, when they are too hard or too large they cannot be crushed. This operation is contra-indicated when there are several small calculi, and in this point of view the conclusions arrived at by Kirmisson in his excellent thesis appear quite correct:—"Chez les enfants, la lithotritie moderne ne donnera de bons résultats que si elle est appliquée dans toute sa rigueur. Si l'on ne pense pas pouvoir faire l'évacuation compléte de la vessie en une seule séance, ou du moins pousser le broiement assez loin pour que la poussière calculeuse ne donne lieu, pendant son passage à travers l'uretre, à aucun accident, il vaut mieux employer la taille, qui fournit, a cet âge de la vie, de très beaux succes."

Such, at the present time, are the reasons why both the perineal operation and lithotrity have been abandoned, at least as far as children are concerned; but since 1884 supra-pubic cystotomy has become more and more an honour. It is far surer, and one is not working in the dark; the technique is extremely simple, and it can and should be practised by surgeons even of little experience in bladder work. We will now briefly set forth the principal rules of the classical technique of the operation in children, as well as the preliminary and post-operative care.

Excepting in those instances where the condition requires immediate operation, the general health, as well as the local condition of the organs, should be carefully gone over. Weakness, or extreme anæmia, are in children contra-indications, or at least sufficient reasons for deferring the operation, and one should wait until the organic resistance of the patient will permit a favourable operative outcome. Although calculous cystitis is not frequent in children, a careful examination of the kidneys and urine should never be neglected. If the urine is purulent or simply alkaline at the time it is voided, irrigation of the bladder should be done for several days prior to the operation, but Petersen's advice to use irrigation in order to progressively distend the viscus is absolutely useless. The liquid should have the temperature of the body in order to prevent any reflex contractions, and I think the best solution for this purpose is a one in two thousand nitrate of silver. A milk diet, combined with the administration of salol or urotropin, will realise an indirect antisepsis, which occasionally is useful. The bowels should be carefully emptied for several days before the operation.

The lower half of the abdomen, including the umbilicus and genital organs, should receive the ordinary treatment as in any laparotomy, and general narcosis with ether is necessary, the primary anæsthesia being obtained by ethyl chloride. Trendelenburg's position will facilitate both the operation and the distension of the bladder, which should always be done before the operation is commenced. The use of air, as I have pointed out elsewhere, appears to me to be far preferable to an antiseptic solution, and the amount to be injected is about 90 to 100 cc. in children from five to six years of age. While the air is being injected the operator should percuss the abdomen in order to ascertain the amount of distension; the dulness and resistance offered by the suprapubic region are excellent guides. The use of Petersen's rectal bag is of no more use here than it is in adults, and its dangers are just the same, but the introduction of the finger of an assistant in the rectum may occasionally be of much use; by pushing the bladder forward with this finger it is made to come in contact with the anterior abdominal wall. In little girls this method is particularly useful, because the uterus is easily raised by the finger in the rectum, and consequently allows the urinary reservoir to be brought forward.

These precautions having been taken, the abdominal wall is then incised, but great care should be exercised to carry the incision directly in the median line, on account of the great mobility of the distended bladder in children. The incision need only be about four or five centimetres, at least, in the beginning, as it is preferable to increase it during the operation if, on account of the size of the calculus, it is necessary to have a larger opening. One should remember that the elastic fibrous tissue, which, in the adult, forms the suspensory ligament of the penis, is only in a rudimentary state in little boys, and the linea alba is extremely narrow, so that frequently it is quite impossible to recognise it, and, for this reason, the sheath of the rectus muscle is usually opened, which offers no great hindrance, provided that the knife does not diverge too greatly from the median line. The incision of the thin aponeurosis forming the posterior layer of the sheath of the recti opens up the preperitoneal space of Retzius. This is usually absent up to the age of eight or ten years, so that, when the wall has been incised, the bladder is at once exposed, covered by the umbilico-prevesical aponeurosis on its anterior aspect. It is at this time that it is necessary to determine whether one is really in presence of the urinary reservoir, and introducing the index finger through the lower part of the wound, the surgeon will come upon the distended convex vesical globe behind the pubis ; but here again the use of the rectal finger renders the greatest service, and in itself is enough to assure the operator that he has exposed the bladder.

Nothing now remains but to incise the urinary reservoir. Before doing this, however, the fibrous tracts and masses of fat covering the anterior aspect of the organ should be pushed out of the way, and it is also necessary to peel from below upwards the peritoneal cul-de-sac in order to keep it from the knife. This is easily accomplished with the finger at the upper part of the wound, and one may also feel the insertion of the urachus on the apex of the bladder. The bladder should be opened in the median line, but it is unnecessary to pass any sutures to hold it, because in children it projects into the abdominal wound, and it may be retained outside the pelvis when once emptied. After incision the borders of the wound should be held by sutures passed through them, as in operating on the adult, and the calculi are carefully removed, care being taken to leave none behind when they are numerous and small. In children, urinary concretions will sometimes be found at the apex of the organ, and they should be looked for here. It is much better to extract the stones with the finger than with instruments, and when they are all removed it is not a bad plan to wash the bladder out with a little sterile salt solution, which will remove any minute stones or sand. After this all that is necessary to do to close the bladder and the abdomen.

In order to obtain cicatrisation of the suprapubic wound and the return of the urine by way of the urethra, many proceedings have been proposed, but from the very fact of their number it will be impossible to consider them all, so that we will simply class them according to their essential characters and rapidly indicate the principles upon which they are based :—(1) Partial suture of the bladder wound and abdominal incision; (2) total suture of the bladder, and incomplete suture of the abdominal wall; (3) total suture of the bladder and abdominal wall with or without a permanent catheter.

A fourth technique should also be mentioned, which consists in suturing neither the bladder nor the abdominal wall, allowing the closure of the wound to take place by second intention. The great advantage of draining the bladder is that it does away with the permanent catheter, and the drainage tube in the suprapubic wound can be changed for a smaller one within a few days after the operation, and cicatrisation rapidly takes place when the bladder is not infected, which is usually the case in children. The permanent catheter is tolerated with difficulty in young children, and it rapidly becomes incrusted with salts. Then again, it is with difficulty held in place. Even when it can be retained its advantages are doubtful, pus, mucus, or a small clot may obliterate its lumen, and thus compromise its function, under which circumstances the urine will accumulate in the bladder and pass through the points of suture. Then again, the danger of infection is ever present, for one can rarely obtain a complete asepsis of the lower end of the catheter. By doing away with the permanent catheter, the post-operative treatment after complete closure of the bladder and abdomen is greatly facilitated.

Complete suture of the bladder and incomplete closure of the abdominal wall appears to be an intermediary between suprapubic drainage and complete suture of the bladder and abdomen. It has been more especially employed in adults, because of the fear of urinary infiltration, an accident less to be feared in children. Many excellent results have been reported, and eighteen cases of stone in the bladder in children, reported by Alexandrow, were all discharged from the hospital within from 10 to 20 days after the operation. Such results as these would appear favourable to the method, but the use of the permanent catheter must be resorted to, and its inconveniences have already been pointed out. It is not very comprehensible why a pre-vesical drainage should be necessary if the bladder has been carefully sutured, so that all urinary infiltration is impossible. But if the bladder is infected the method is decidedly bad. The permanent catheter, which keeps up the inflammation, allows one to make only small irrigations, which can in no way be compared with the free irrigation and drainage offered by suprapubic drainage tubes. On the other hand, we know that the space of Retzius is rudimentary in children, the bladder is situated high up, and there is no place for decortication and for the drain, while a tube introduced into the bladder makes no very great delay in the closing of the latter. Vesical drainage, as a proceeding of security, is to be recommended when a perfect suture of the bladder has not been possible; but of late years one knows how to hermetically suture the bladder and the abdomen, so that a permanent catheter is not required.

Complete suture of the bladder and abdominal wall is still a question under study, but it would seem to me from my own experience that, if it is properly done, on the condition that the bladder is not infected, it is the technique to be preferred. Silk or celluloid thread should always be used for sutures, a continued one, including only the muscular layer, and over this a second row of Lembert's suture is inserted. The abdominal walls are closed in the usual way. The patient should be catheterised every three hours, and no permanent catheter is necessary. There are few contraindications to total suture, the only ones being marked changes in the bladder, a thickening of its walls, or pericystitis with adhesions, and naturally vesical infection. Hæmorrhage is rarely to be feared, because calculi in children are usually primary and the bladder healthy. The sutures at the borders of the bladder incision should always commence somewhat beyond the limits of the incision, and, after this has been completed, the bladder should be distended with sterile salt solution in order to ascertain whether or not the viscus is hermetically closed.

When one is assured of this, and the abdominal wall is closed, it is absolutely necessary during the after treatment to prevent any distension of the bladder. The passage of the catheter every three hours is extremely difficult in young children, and it also requires more experience than in adults. Personally I think that, after the first 24 or 48 hours, most children will be able to urinate spontaneously, and, provided that they can be made to do so at regular intervals, the use of the catheter will no longer be necessary. Let us now consider the actual value of total suture, with reference only to suprapubic cystotomy for calculus. There are already a large number of cases reported, and the statistics given are too important to be neglected; it may be said that the number of successful outcomes from total suture increases each year. In 1886, Schmitz, out of 17 cases attained 13 instances of union by first intention, and Irschick, who operated on 20 cases, obtained 7 primary unions—in other words, 35 per cent. In 1887, Couvée published Iterson's results in 18 cases, total suture having been successful in 13. Bassini obtained 14 successful results out of 21 operations—in other words, 66.6 per cent. The statistics due to Alexandrow of 26 children operated on by suprapubic cystotomy, varying in age from 2 to 7½ years, are so complete that they are worthy of being given in detail; and as he employed various techniques, it is possible to establish a comparison. Twice he employed vesical drainage, and a cure was only obtained in 47 days in one, and in the other in 21 days, but it should be pointed out that these periods of recovery were rather longer than is usually the case. In 24 children he made a total suture of the bladder, in 16 of which he employed pre-vesical drainage, and 8 times he closed the abdominal wound with the following results. The 16 cases of suture of the bladder with pre-vesical drainage gave 15 primary unions, one unsuccessful result by an opening up of the bladder wound. The majority took 18 days for closure of the drainage opening in the pre-vesical space. In 8 total sutures of the bladder and abdominal wall there were seven primary unions; the eighth case was opened up on account of a hæmorrhage which occurred several days after the operation, but vesical union was found to be nicely advanced. In all these cases a permanent catheter was used, which was removed at the latest within three days. In all the foregoing cases the permanent catheter had been used for a varying length of time, usually from 24 to 48 hours. We now come to the question of total suture without the use of the permanent catheter, but the small number of cases which have been reported, in spite of their brilliant success, prevents me from stating any affirmative conclusion. It may, however, be said that, if these cases continue to be as favourable, it will not be long before this method will be the one of choice.

In going over the statistics comparing partial suture with total suture of the bladder and abdominal wall it would seem that there is no very great difference between the two operations as far as the mortality is concerned. It remains for us to consider the indications for the two methods. In the former, combined with proper drainage, its use, as we have already pointed out, is indicated in all cases where the surgeon has any doubt as to the completeness of his suture, or when the latter may be compromised by the condition of the bladder walls. A contracted bladder, adherent on account of a pericystitis, or on the contrary isolated from the surrounding tissues by operative detachment, a bladder with rigid walls, or where the latter have been injured by the extraction of the calculus, will present an excellent soil for the development of infection, and consequently are capital indications for the first method. Then, again, after the sutures have been applied and distending the bladder with fluid shows leakage, drainage must be resorted to. As to total suture with or without the use of a permanent catheter, its indications are to be found in what has just been said. The operation is certainly the ideal one, and should be followed by success in the large majority of cases on condition that the bladder is not allowed to become distended.

ART. XVII.—*Gangrenous Traumatic Hernia.*[a] By WILLIAM TAYLOR, M.B. Dubl. Univ., F.R.C.S.I.; Member of the Council, Royal College of Surgeons, Ireland; Surgeon to the Meath Hospital and Co. Dublin Infirmary, and Surgeon to Cork Street Hospital, Dublin.

THE subject of my present communication is again, as have been most of my previous communications to this club, that of an old theme, but the case I take to illustrate it has I think at least one feature alike interesting and uncommon to redeem it.

The case is that of a young gentleman, aged twenty-seven or twenty-eight years, who, on the evening of the 24th of July, 1904, received a kick from one of his horses in the left groin.

Dr. Nolans, of Gorey, Co. Wexford, was sent for some hours later, and on arriving found on examination the scrotum and penis greatly swollen and ecchymosed, while the left inguinal region—the site of the injury—was also swollen and discoloured, the skin being slightly abraided over this area. The inguinal swelling crepitated on handling, giving the sensation of surgical emphysema. There was great tenderness over the swelling, and the patient complained of intense pain in it. Next day the state of affairs was much the same. There was absolute constipation, but very little vomiting. There was never any swelling in either inguinal region prior to this injury. An aperient was ordered, also enemata, but without other effect than that of increasing the vomiting and abdominal pain. Tympany of the abdomen soon appeared and rapidly increased. Owing to the history of the injury, the swelling in the left inguinal region associated with vomiting, absolute constipation, and increasing tympany, Dr. Nolans arrived at the conclusion that the case was one of a strangulated traumatic hernia requiring operative interference as soon as possible, and accordingly sent for me. On my arrival on the evening of the third day after the receipt of the injury I found the skin over the left inguinal region becoming gangrenous and crepitating on gentle pressure. The scrotum was perfectly black, and quite as large as a man's head. The general state of the patient was far from promising. Vomiting during the day had been severe, and almost continuous, the pain had been extreme up to that day, the tongue was dry and brown, constipation was absolute, he abdomen greatly disturbed, the facial appearance was one of anxiety, the pulse was quick and feeble, restlessness was marked, and he had been without sleep from the time he received the accident.

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[a] Paper read before the members of the Dublin Biological Club, February 21, 1905.

The stomach was well washed out, and a little chloroform was administered. Having cleaned the affected area as well as we could, a free incision was made through the skin and underlying structures, giving exit to a large quantity of dark brown, foul-smelling fluid, mixed with gas, broken down blood-clot and sloughs. On douching and separating the softened sloughing tissues a small nuckle of gangrenous gut, with a small perforation in it, was discovered at the bottom of the wound.

It was impossible to be certain, but, as far as we could see, the bowel was forced through the muscular structures of the abdominal wall. On account of the very septic state of all the surrounding parts and on account of the patient's general condition I decided to simply make a free incision into the protruding piece of gut. Having done this the wound was irrigated, and the index finger was passed up the opened bowel so as to ensure that the constriction was not so tight as to occlude the lumen of the gut and prevent the exit of its contents. A tube was then placed in the bowel, and gauze packed loosely around it. An opening was made in the bottom of the scrotum, a quantity of blood-clot was removed therefrom, and a drainage tube inserted. Directions were given to wash out the stomach should vomiting recur, and to irrigate the bowel with warm water next morning if the bowels did not act in the interval. A purgative was to be administered as soon as the bowels acted. The subsequent treatment of the case devolved upon Dr. Nolans and the nurse, to whose care and attention at this stage the gentleman owes his recovery. There was a free evacuation next day through the artificial opening, and everything progressed in a very satisfactory manner until, at the beginning of September, on my return from my holidays, the patient was sent up to town to me to operate for the fæcal fistula, or rather false anus, which was bound to exist. After a few days I proceeded to operate by first closing the existing opening as accurately as I could, after which the parts were as thoroughly disinfected as was possible under the circumstances. This being done, a lunated incision was made above the previously existing opening down to the peritoneum. A similar incision was then made below the opening until the peritoneum was again reached. At this point the intervening mass of tissue was grasped with forceps, the peritoneum was opened above and below, and the mass with the afferent and efferent loops of intestine withdrawn, after separating some few adhesions within the abdomen.

The abdominal cavity having been protected by gauze packing, about six inches of the intestine, including the artificial anus, were resected, and an anastomosis was effected by a Hildebrand's modification of the Murphy button. The wound was afterwards closed by suturing in layers with buried cat-gut sutures, and the skin edges united by silkworm gut, except at the scrotal end, from which too much skin had to be removed to permit of accurate approximation. Union by first intention took place throughout the sutured area. The bowels acted naturally on the second day. The button was passed on the ninth day, and the patient left for Gorey in less than a month, and has since then remained in perfect health.

The interest in this case centres round two points, the first being the nature of the hernia, which must be described as traumatic—a form of hernia which is extremely rare, there being practically no mention made of it in any of the text-books with which I am acquainted, while any reference made to such a condition is directed particularly to the diaphragmatic variety; the second point of interest being the method of dealing with a herniated gut, undoubtedly gangrenous, when exposed by operation. With regard to gangrene, a further question for pathologists arises—viz., whether the mechanical arrest of the circulation is the only element of importance in leading to its production, or whether gangrene does not very largely depend upon organismal virulence and activity. Not infrequently a surgeon cuts down upon a hernia strangulated for two or three days, and yet finds the gut in such a condition that he returns it without a moment's hesitation, while, on the other hand, he has occasion to operate upon a case in which the strangulation has existed for perhaps less than 24 hours, and apparently no more tightly than in the former case, yet the condition of the strangulated gut is one almost, if not quite, gangrenous. Such a diverse state of affairs would surely seem to point to other factors than mere mechanical interference with the circulation being of ætiological importance in leading to the production of intestinal gangrene. Before coming to the treatment of undoubtedly gangrenous gut when exposed in the sac of a hernia, I should like to ask for information from those members of the club whose experience is greater than my own, how they finally solve the problem as to what is to be done in those cases which are in a decidedly doubtful state, and which embrace, so far as my experience goes, by far the largest proportion of cases one meets in practice? My own practice, so far as tests are concerned, is to employ warm saline irrigation, after dividing the constriction and withdrawing the loop, and notice whether the circulation returns as shown by change of colour. The gut is also flipped with the finger or handle of the knife, and peristalsis watched for. It is particularly noticed whether the peristalsis thus excited travels beyond the area of constriction. The veins in the mesentery leaving the loop are also examined to see whether they are thrombosed. Of course the site of constriction is examined the moment the gut is freed, also the most distal part of the loop. In spite of these tests I have often found extreme difficulty in deciding whether the loop is likely to recover, and consequently what should be done with it. Hitherto I have always returned the loop in such cases just within the internal abdominal ring, merely closing the skin around, and in no case have I had occasion to regret this step. The abdominal cavity seems the best place to ensure the recovery of a doubtful piece of intestine. It is, I think, unquestionably the case that many unnecessary resections are performed in such cases, and few will be found to deny the fact that resection will add, to place a mild estimate upon it, at least 20 per cent. to the mortality of the operation for strangulated hernia. As regards the treatment of undoubtedly gangrenous hernia I do not think any surgeon would be so unwise as to lay down a hard and fast rule which he would make applicable to all cases. For example, to have resected the gangrenous loop and opened the abdominal cavity to perform an anastomosis in the presence of a mass of septic sloughing tissues, such as I had to deal with in the case already detailed, would, in my opinion, have meant disaster.

Again, resection followed by anastomosis considerably prolongs the time occupied by the operation, and many such patients are not in a fit state to withstand prolonged operations. To leave a large gangrenous loop in the sac of a hernia—merely making an incision into it—would undoubtedly be unwise, as the increased septic absorption therefrom would surely add the last straw to the patient's already overtaxed recuperative powers. In such a case, if the patient's condition is one of gravity, resection of the greater portion of the affected loop as it lies in the sac of the hernia, without touching the constricting band, would probably be the line of treatment from which the best results might be anticipated. Resection and immediate restoration of the continuity of the intestinal canal should, in my opinion, only be undertaken where, in the first place, the patient's condition is otherwise good, and secondly, in cases in which perforation has not yet taken place, and consequently in which the gangrenous process has not spread to the surrounding tissues, no matter whether the affected loop be large or small. The treatment of the affected area in cases of partial enterocele, of which I have met with three examples, in the sac of a hernia—two of which occurred in successive weeks—is always one of considerable anxiety when the ensnared portion involves more than one-third of the circumference of the bowel, but if less than this amount is involved the difficulty is easily overcome by enfolding the affected area by a purse-string suture, and applying a couple of Lembert sutures over this again at right angles to the long axis of the intestine.

One other question arises in connection with gangrenous hernia—viz., should a radical cure ever be attempted in cases in which resection and immediate anastomosis have been performed. My own reply would be certainly not. Sepsis is pretty certain to occur in the wound, and the attempted radical cure will be a failure.

To sum up, I should say that in all doubtful cases of partial enterocele involving one-third or less of the circumference of the bowel, the affected area should be enfolded and the loop returned into the abdomen. In all doubtful cases of partial enterocele involving more than one-third of the circumference of the bowel, the treatment should be the same as that for ordinary doubtful cases of strangulated hernia—that is, return the loop just within the internal ring.

In undoubtedly gangrenous partial enteroceles involving one-third or less of the circumference of the bowel, enfolding the gangrenous area by a purse-string suture, reinforced by a Lembert suture applied over it at right angles to the long axis of the gut, would appeal to me as the proper course to adopt, while should the gangrenous process involve more than one-third of the circumference of the bowel, resection of a couple of inches at least of the bowel, followed by immediate anastomosis (lateral or end-to-end, as the case may be), if the patient's condition is otherwise suitable, should be adopted. If the patient's condition is not considered suitable for immediate anastomosis the loop should be withdrawn, the gangrenous portion cut off, and the ends drained by Paul's tubes.

In either large or small gangrenous herniæ if the loop has not perforated, if the gangrenous process has not spread to the surrounding tissues, and if the patient's condition is suitable, resection of not only the affected portion but of a considerable portion both above and below the area of constriction, followed by immediate anastomosis, should be performed.

In small gangrenous herniæ which have perforated, or in which the gangrenous process has spread to the surrounding tissues, or in which the patient's condition is bad, a free incision into the affected loop without interfering with the constriction will give the best results.

Large gangrenous herniæ which have perforated, or in which the gangrenous process has spread to the surrounding tissues, and in which the patient's condition will in all probability be extremely grave, are best treated by cutting away the greater portion of the gangrenous loop and leaving the wound open for free drainage, the constriction being left untouched.

ART. XVIII.—*A Case of Syringomyelia.*[a] By H. T. BEWLEY, M.D.; Physician to the Adelaide Hospital, Dublin.

SYRINGOMYELIA belongs to the rarer class of diseases of the spinal cord, and therefore it seems that well marked cases which are met with from time to time should be exhibited and recorded.

The symptoms of this condition are most often noticed about the time of puberty, or rather later. They may be divided into several groups:—(1) The peculiar disturbance of sensations, called by Charcot "dissociated anæsthesia"—*i.e.*, diminution or loss of sensation of pain and of heat or cold, while ordinary sensation is fairly well preserved. (2) Trophic changes in the parts affected, leading to various phenomena, among which is frequently found curvature of the spine. (3) Muscular atrophy. (4) Alteration of the spinal reflexes. (5) Paralysis of the sympathetic nerve in the neck. (6) Affections of the cranial nerves. These symptoms are usually more marked on one side than on the other.

The case which I have to exhibit to you presents several of these symptoms in a typical form.

G. H., aged 22, of healthy parentage as far as I can ascertain, noticed about the year 1901, when she was 16 years of age, that the fingers of her right hand were inclined to become inflamed from time to time. Some of these inflammations were severe and suppurative in type, and the bones of the ungual phalanges were affected. Some time afterwards she noticed that when she put her hands into hot water she felt the heat much more with the left than with the right one. About 1903 she found she became very tired on trying to walk any distance, and she was told her back was crooked. About a year ago she burned her right forearm by holding it too near the fire; she did not perceive the heat, but the result was an ulcerated surface, which has now healed, leaving a scar. In December, 1904, one of her fingers became very inflamed, and she was admitted into the Adelaide Hospital, under Mr. Gordon, who recognised the condition as syringomyelia, and had the case transferred to me. Her present condition is as follows:—

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[a] Read at the Medical Section of the Royal Academy of Medicine in Ireland, March 31, 1905.

1. *Sensation.*—Ordinary sensation is somewhat dulled on the right arm, but the deficiency is slight; elsewhere sensation is equal on both sides. Sensation of pain is very deficient all over the right side of head and body, right arm, and right thigh, extending in front down to the middle of the thigh, and behind to the gluteal fold. In the trunk and scalp the analgesia extends up to the middle line; in the face it falls short of the middle line by about 1½ inches. In the right arm and hand the analgesia is absolute; a pin can be stuck into her flesh without causing any pain. Elsewhere pain can be felt, but in a lesser degree than on the left side of the body. The mucous membranes seem to be sensitive to pain on both sides. The sensation of heat is diminished over the same area, but as the power of distinguishing heat from cold is nowhere lost, but only dulled, it is difficult to be exact as to the limits of the dulling of thermal sense. In the right arm, heat, though felt as heat, seems incapable of causing painful sensations. The distribution of the analgesia, therefore, is strictly confined to the right side, and involves the portion of the body which receives innervation from the brain and from the spinal cord down to the level of about the 3rd lumbar segment. The thermal insensibility occupies approximately the same area, but I am less sure about its limitations.

2. *Trophic Disturbances.*—She has had a number of whitlows affecting the fingers of the right hand, as a result of which the ungual phalanges of the ring and little fingers have been lost, while the other fingers are thickened by the inflammation which occurred. These whitlows were all devoid of pain. A month ago she had a sloughing sore on the right wrist, devoid of pain; it has now healed. The left hand has been free from sores.

The spine is curved to the right in the whole dorsal region, and the vertebræ are rotated so that the ribs project posteriorly on the right side.

3. *Atrophy.*—The arms show no atrophy; the muscles are not weakened on the affected side.

4. *The Special Reflexes.*—There is increased knee-jerk on the right side. There is no clonus, either ankle or rectal; but on the right side four or five jerks are felt when the attempt is made to get clonus, while on the left there are no such jerks. Babinsky's phenomenon is absent. In the arms there is a triceps jerk on the left, but none on the right, side.

5. The cervical sympathetic is not affected. The pupils are normal. The ophthalmoscopic appearances are normal.

6. The analgesia present in the right side of the head has been mentioned; otherwise the cranial nerves are unaffected.

The chief points of special interest in this case are—(1) the exclusively unilateral distribution of the phenomena, and (2) their wide extent on the right side of the body. It is common for one side to be involved more than the other, but generally there is some degree of involvement of both sides. It is usual for the symptoms of syringomyelia to be confined to the arms and upper part of the trunk: in this case the analgesia exists over the right half of the head and body which receives its nerve supply from the brain and spinal cord as low as the 3rd lumbar segment.

ART. XIX.—*Sequel to a Case of Innominate Aneurysm reported in* 1898.[a] By JAMES CRAIG, M.D. Univ. Dubl.; Fellow and Registrar R.C.P.I.; Physician to the Meath Hospital and Co. Dublin Infirmary.

ON December 16th, 1898, I brought under the notice of the Medical Section of the Royal Academy of Medicine in Ireland a case of innominate aneurysm which had become entirely quiescent by prolonged rest, sparing diet, and the administration of iodide of potassium internally.

The patient, who was then 65 years of age, presented the physical signs of an innominate aneursym in June of 1897. He was confined to bed for something over two months when the symptoms and physical signs having largely subsided he insisted on going to the South of France. There he continued to carry out the principles of treatment already enumerated, and at the close of the year 1897 he was entirely free from all symptoms. I examined him carefully 18 months after the onset, and unless for a slight prominence and diminished resonance where the tumour had presented, there were absolutely no other physical signs of an aneurysm to be found. In subsequent years he spent the greater part of his time at Continental health resorts, but I saw him during his periodic autumnal visits to Dublin. He grew strong, lead an active outdoor life, and never complained of illness. In the spring of 1904 he was at Wiesbaden. On Sunday, April 24th, he was at a dinner party, and enjoyed himself thoroughly; on the following Wednesday he remained indoors, as he felt out of sorts; that night he suddenly sat up in bed, blood began to pour from his mouth, and in a few moments he was dead.

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[a] Read before the Section of Medicine in the Royal Academy of Medicine in Ireland, on Friday, March 3, 1905. [For discussion on this paper see page 381.]

Dr. Altdorfer kindly wrote to me as follows:—"At the *post-mortem* examination it was found that the aneurysm of the innominate, which you diagnosed, had become consolidated and did not give any trouble, but that there existed a second—much larger—aneurysm of the thoracic aorta, which had perforated into the œsophagus close to the stomach, so situated that it probably could not be diagnosed at all. It is most astonishing that, according to all accounts, the patient should have felt so well up till a few days before his death."

Drs. Stein and Altdorfer made the following report:—

Protocol of the post-mortem examination.

"On lifting the sternum, one notes on the inner side of the manubrium sterni a greyish red tumour of the size of an apple attached to the inside surface of the bone, which has destroyed the latter to more than half of its depth.

"On loosening the sternum completely, the surface of the above-mentioned tumour bursts, and one notes that there is a cavity in the interior filling up partially with coagula of blood.

"Both cavities of the pleura contain a few drachms of a clear amber yellow fluid.

"The apex of the left lung is slightly fixed by adhesions.

"The stomach is extremely distended and dark-coloured.

"The organs of the chest cavity are taken out altogether.

"The cavity of the pericardium contains about two wineglassfuls of a clear amber yellow fluid.

"The surface of the heart is covered with plenty of fat. The heart muscle is in a state of fatty degeneration. The aortic valve is incompetent and rigid. The walls of the aorta are covered with many hard plates of different sizes.

"The cavity of the above mentioned tumour under the upper end of the sternum represents a dilatation of the anonyma. The wall of this dilatation measures about one inch in thickness.

"There is a second dilatation on the arcus of the aorta expanding into the mediastinum posterius. The cavity of this dilatation is of the size of the head of a new born child, the walls are very thin. A part of the wall is fixed by adhesions to the anterior surface of the spine, and bursts while loosening it.

"The anterior surface of the œsophagus is closely attached to the wall of the dilated aorta. The interior surface of the cavity is covered with plenty of the above mentioned hard plates. On the back of the cavity is a small spot where the wall is completely destroyed; there is an open passage to the interior of the œsophagus.

"The stomach and the upper parts of the small intestine are filled with dark-coloured blood.

"Liver, spleen, kidneys, are without particular changes.

"The lungs partially contain air; the other parts and the bronchi are filled with blood and coagula.

"Diagnosis:—Aneurysm of the anonyma; aneurysm of the arcus aortæ. Spontaneous perforation into the œsophagus; myocarditis; arteriosclerosis. Death by bleeding and suffocation.

"Wiesbaden, the 28th of April, 1904.

"DR. MED. ALBERT E. STEIN.
"M. ALTDORFER, MED. DR."

I am sure that my hearers will agree with me in considering the case to be one of unusual interest.

The consolidation of the innominate aneurysm was in itself an interesting fact, but the sudden death of the patient from the rupture of another and much larger aneurysm, seven years after the onset of the one which became quiescent, is worthy of note.

There is no evidence at what period the fatal aneurysm began to develop, and while it may be possible that it existed at a date prior to the appearance of the one on the innominate artery, it is much more likely that its onset was of a subsequent date. Owing to the absence of symptoms until the day of death it might be assumed that the formation of the aortic aneurysm had been a very recent occurrence, but its adhesion to the spine and its adhesion to and erosion of the œsophagus must have been the result of prolonged pressure. That such pressure should exist without the production of pain is difficult of conception, and can be explained only by the yielding nature of the structures in front of this portion of the aorta.

ART. XX.—*Earth Temperature and Diarrhœal Diseases in Dublin during* 1904.[a] By SIR JOHN W. MOORE, M.D. Dubl.; D.Sc. Oxon. (*Honoris Causâ*); F.R.C.P.I.; Physician to the Meath Hospital and County Dublin Infirmary.

IN an elaborate report to the Local Government Board for England upon the causation of the annual mortality from "diarrhœa," which is observed principally in the summer season of the year, the late Dr. Edward Ballard in 1887 advanced the proposition that the temperature of the soil is a far more effective element in raising the death-rate from diarrhœal diseases than any other meteorological factor.[b] He constructed for London and many other towns in the kingdom a large number of charts showing week by week for many years the earth-temperature at a depth of 1 foot from the surface and at a depth of 4 feet also, each chart showing in addition the diarrhœal mortality of the corresponding weeks. The general result shown by these charts is as follows:—

(*a.*) The summer rise of diarrhœal mortality does not commence until the mean temperature recorded by the 4-foot earth thermometer has attained somewhere about 56° F., no matter what may have been the temperature previously attained by the atmosphere or recorded by the 1-foot earth thermometer.

(*b.*) The maximal diarrhœal mortality of the year is usually observed in the week in which the temperature recorded by the 4-foot earth thermometer attains its mean weekly maximum.

(*c.*) The decline of the diarrhœal mortality coincides with the decline of the temperature recorded by the 4-foot earth thermometer, which temperature *declines* very much more slowly than the atmospheric temperature, or than that recorded by the 1-foot earth thermometer. The epidemic mortality may in consequence continue (although declining) long after the last-mentioned temperatures have fallen greatly, and may extend some way into the fourth quarter of the year.

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[a] Read before the Section of State Medicine in the Royal Academy of Medicine in Ireland, on Friday, February 10, 1905. [For discussion on this paper see page 302.]

[b] *Supplement in continuation of the Report of the Medical Officer for* 1887. Annual Report of the Local Government Board, 1887-88. London: Eyre & Spottiswoode. 1889. Quarto. P. 1, et seq.

(*d.*) The atmospheric temperature and that of the more superficial layers of the soil exert little, if any, influence on the prevalence of diarrhœa until the temperature recorded by the 4-foot earth thermometer has risen to 56° F. Then their influence is apparent, but it is a subsidiary one, notwithstanding the statement made by Dr. August Hirsch that the summer diarrhœa of children makes its appearance as an epidemic only in those districts whose average temperature for the day in the warm season is rather more than 15° C. (59° F.).

Dr. Ballard believed that a working hypothesis, or provisional explanation, that would best accord with the whole evidence then in his possession bearing on the production of epidemic diarrhœa, may be stated as follows:—

1. The essential cause of diarrhœa resides ordinarily in the superficial layers of the earth, where it is intimately associated with the life processes of some micro-organism not yet detected, captured, or isolated.

2. The vital manifestations of such organism are dependent, among other things, perhaps principally, upon conditions of season and on the presence of dead organic matter which is its pabulum.

3. On occasion, such micro-organism is capable of getting abroad from its primary habitat, the earth, and having become air-borne obtains opportunity for fastening on non-living organic material, and of using such organic material both as nidus and as pabulum in undergoing various phases of its life-history.

4. In food, inside of as well as outside of the human body, such micro-organism finds, especially at certain seasons, nidus and pabulum convenient for its development, multiplication, or evolution.

5. From food, as also from the contained organic matter of particular soils, such micro-organism can manufacture, by the chemical changes wrought therein

through certain of its life processes, a substance which is a *virulent chemical poison*.

6. This chemical substance is, in the human body, the material cause of epidemic diarrhœa.

To the foregoing we have only to add Dr. Meinert's words: "The poison, or a combination of poisons, appears to work upon the medulla oblongata, for there lies the centre for intestinal secretion, vomitings, convulsions, respiratory and vaso-motor phenomena." This is a quotation from an article on "Cholera Infantum" by Dr. E. Meinert, of Dresden, which appeared in the *Medical Annual* for 1893. In that article Meinert fully accepts Ballard's views, especially his statement that *density of buildings*, whether dwellinghouses or otherwise, upon area—quite apart from *density of population* upon area—promotes diarrhœal mortality to a remarkable degree, particularly because crowding together of buildings of whatever sort restricts and offers an impediment to the free circulation of air.

On January 1, 1904, through the liberality of the Provost and Senior Fellows of Trinity College, a Normal Climatological Station was established within the precincts of the University of Dublin. The station, which is under the supervision of Professor W. E. Thrift, M.A., F.T.C.D., occupies an open space in the Fellows' Garden, Trinity College, and is fully equipped. At the suggestion of Dr. William Napier Shaw, F.R.S., Secretary of the Meteorological Office, London, the equipment included two earth thermometers. One of these has its bulb at a depth of 12 inches (1 ft. earth thermometer) below the surface of the ground. The bulb of the other is sunk in a metal tube to a depth of 4 feet.

So far, of course, the observations for only one year—1904—are available for discussion. Nevertheless, I thought that the State Medicine Section of the Royal Academy of Medicine in Ireland would be interested in the attempt to test the accuracy of Ballard's theory by a comparison of the death-curve of diarrhœal diseases in the Dublin Registration Area during the summer and autumn of 1904 with the earth-temperature records in

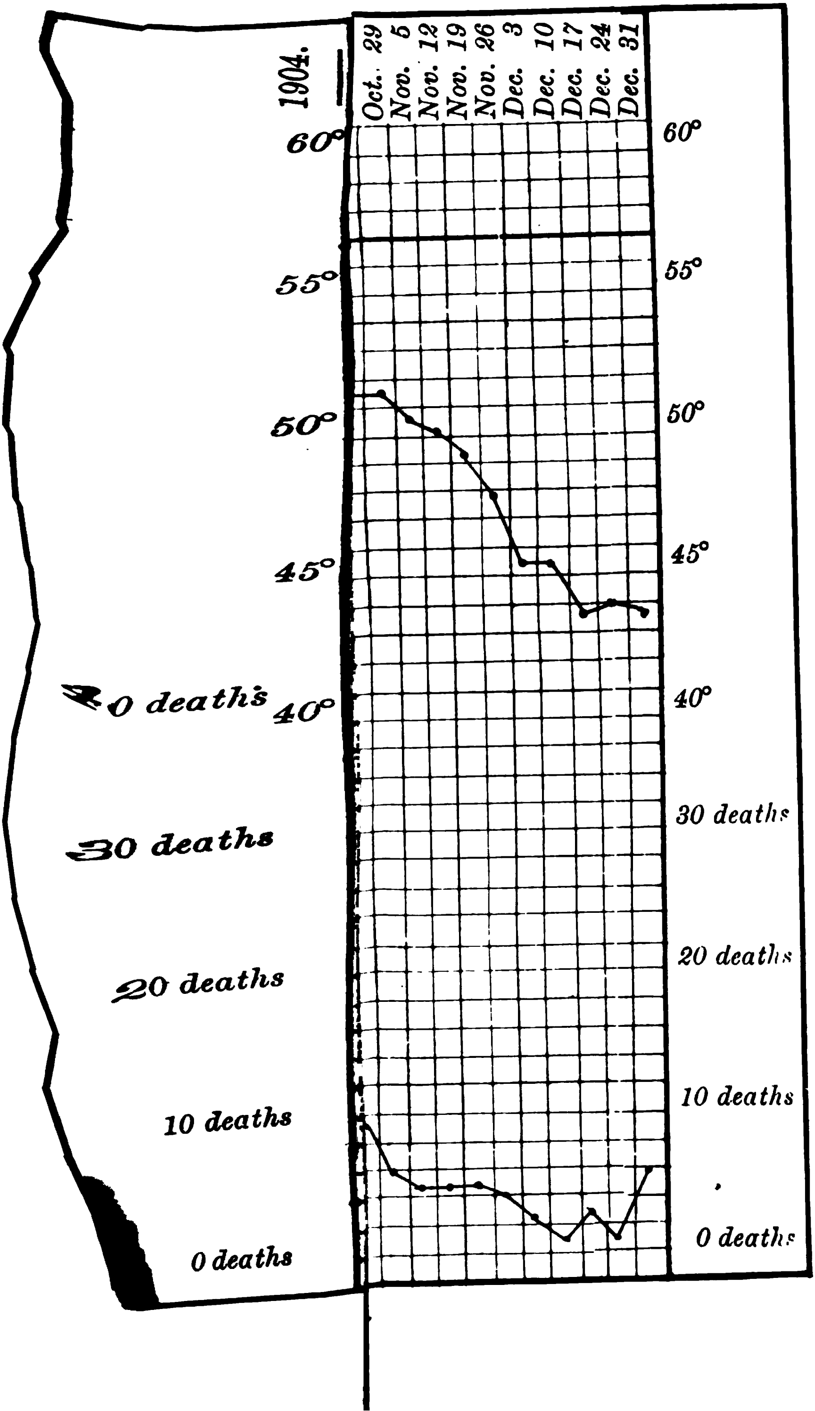
Trinity College—the site of the Observatory being in very centre of the Metropolitan District.

The observer, my son, Arthur Robert Moore, B.A., thrown the figures into two diagrams. The first of t (Diagram I.) gives three temperature curves for each of the three months, July to September, 1904. The tinuous black line is that of the air temperature at 4 *above* the ground recorded in a Stevenson screen at 9 daily. The upper green line shows the earth-tempera at 9 a.m. each day at a depth of one foot *below* the sur of the ground; the lower blue line similarly gives earth-temperature four feet below the surface. At base of the diagram will be seen in red the number deaths from "diarrhœal diseases" registered week week in the Dublin Registration District.

Diagram II. contains two weekly curves for the wh year 1904. The upper of these represents the wee march of underground temperature at a depth of f feet. The lower red curve gives the number of dea from diarrhœal diseases registered each week of 1904 the Dublin Registration Area.

In both diagrams especially heavy rainfalls have be entered, and in the epidemic season weekly measureme of an inch or upwards on two occasions seem to have be closely followed by a decline in the number of deat from diarrhœal diseases. Thus in the week end September 3, the rainfall amounted to one inch (.9 inch); a fortnight later the weekly diarrhœal deaths f from 26 to 14. Again, in the week ended September 1 the rainfall exceeded an inch and a quarter (1.2 inches); a fortnight later the weekly diarrhœal death fell from 28 to 16.

Reference to the curves in Diagram II. shows tha diarrhœal mortality in the Dublin district in 1904 wa trifling till the week ended August 6—that is, the thir week after the subsoil temperature at 4 feet had passe above 56° F. The mortality rapidly increased till the week ended August 27, in which 35 deaths from diarrhœal diseases were registered, or about 10 per cent. of all the deaths from those diseases in the whole year 1904. This


1904.
Oct. 29
Nov. 5
Nov. 12
Nov. 19
Nov. 26
Dec. 3
Dec. 10
Dec. 17
Dec. 24
Dec. 31
60°
55°
50°
45°
40 deaths
40°
30 deaths
20 deaths
10 deaths
0 deaths
60°
55°
50°
45°
40°
30 deaths
20 deaths
10 deaths
0 deaths

maximum of mortality followed the maximum of warmth of the soil at 4 feet (58.5°) by an interval of just a fortnight. Such a coincidence is remarkable. Diarrhœa kills very young children quickly—usually within a week. Then, allowing a few days for delay in registration, we come to the close of the second week.

Diagram II. also shows that the 4-foot thermometer stood at 56° or upwards from the 10th of July to the 24th of September—a period of eleven weeks. Starting a similar period of eleven weeks a fortnight later (to allow time for the malady to attack and kill and for registration of the resulting deaths), we find that in the eleven weeks beginning July 24 and ending October 8, the diarrhœal deaths were 249, or 71.7 per cent. of the total deaths from diarrhœal diseases registered in 1904, 339 in number. Of these, only 18 were registered in the first quarter of the year, only 10 in the second, 243 in the third, and 68 in the fourth quarter. In his Quarterly Summary of the weekly returns of births and deaths in the Dublin Registration Area, under date October 1, 1904, the Registrar-General observes:—"The deaths from diarrhœal diseases form a feature of the mortality statistics, this being a usual coincidence at the period of the year included in this report (July 3 to October 1, 1904, inclusive). The total number of deaths assigned to above causes was 243—namely, 104 deaths from epidemic diarrhœa, epidemic enteritis, and 139 deaths from '*diarrhœa* dysentery.' The total equals a rate of 2.6 per 1,000 of the population (estimated) of the Dublin Registration Area, and exceeds the average for the corresponding quarter of the past 10 years by 33 deaths. Of the total deaths, 204, equal to an annual rate of 2.8 per 1,000, appertained to City Districts, and 38, equal to an annual rate of 1.8 per 1,000, appertained to the Urban Districts which, with the City, constitute the Dublin Registration Area." The mean of the readings of the 4-foot earth thermometer in these thirteen weeks ending October 1, 1904, was 57.0°—a remarkable coincidence, to say the least, this figure being one degree above the "critical" temperature at 56° F. In my opinion, "Diarrhœal Diseases" should be "notifiable" from July 1 to September 30 in each year, so as to give even more timely warning of an epidemic tendency.

Dr. Edward W. Hope, Medical Officer of Health for Liverpool, some years ago investigated the influence of the mode of feeding of young infants on the prevalence and fatality of diarrhœa, and came to the conclusion that infants fed solely from the breast are notably exempt from fatal diarrhœa, whereas infants fed with artificial food to the exclusion of breast milk suffer most severely from this dread disease. In relation to this Dr. Ballard's observations go to show that the direct or indirect exposure of food to telluric emanations tends to render it liable to produce diarrhœa, particularly when the storing place is dark and ill-ventilated.

According to Flexner the bacillus of dysentery can be isolated from the intestinal discharges and the intestinal mucosa of a large percentage of children suffering from the diarrhœal diseases prevalent along the Atlantic seaboard of the United States of America in summer. The type of bacillus most commonly found is that known as the Flexner-Harris. The Shiga type is exceptionally met with, and both types may occur in association.[a] There is some reason to believe that the dysentery bacillus may be found among the saprophytic intestinal bacteria. So long ago as 1890, Weichselbaum (Wien. klin. Wochenschrift, 1890, Vol. III., page 187) isolated the Diplococcus pneumoniæ in a case of membranous enteritis. It will be well in future for this organism to be sought for in the stools of "summer diarrhœa."

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[a] **Recent Investigations concerning the Pathology of the Infectious Diseases. By Aldred Scott Warthin, Ph.D., M.D., Professor of Pathology, University of Michigan. International Clinics. Vol. IV. Fourteenth Series. 1905. Page 238.**

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

I. *I-Em-Hotep and Ancient Egyptian Medicine.*—II. *Prevention of Valvular Disease.* The Harveian Oration delivered before the Royal College of Physicians on June 21, 1904. By RICHARD CATON, M.D., F.R.C.P.; Emeritus Professor of Physiology, University of Liverpool; Consulting Physician, Royal Infirmary. With Seven Illustrations. London: C. J. Clay & Sons. 1904.

THIS beautiful octavo volume of 34 pages does credit to all concerned in the various departments of its production: the author, artist, engraver, paper manufacturer, printer, book-binder, and publishers. All these functionaries have conspired to throw a gracefully illuminating halo around the nucleus of truly inspiring radiance which constitutes the text of Dr. Caton's Harveian Oration. Enthusiastic Egyptologists are never tired of assuring their contemporaries that the germ of every science known to the opening years of the twentieth century existed in ancient Egypt; they sometimes even insinuate that many such not only grew and blossomed, but even bore fruit more succulent and nutritive than any known to the nurseries of the growing intellect of our own generation. On so broad a question we do not propose to ventilate our own private opinions on the present occasion. But Dr. Caton has demonstrated a striking example of the meeting of (apparently the remotest) extremes across the abysmal ignorance of tens of centuries. He has shown the anticipation in ancient Egyptian physiology of a portion at least of what is generally referred to as the great "discovery" of William Harvey regarding the mechanism and direction of flow of the vital fluid in the animal body. The achievements of the monarchy of the Pharaohs is indeed worthy of the respect of our own more mobile generation. The monuments of genius which it has transmitted to posterity are surveyed with delight, as well as despair, by the most appreciative eyes and minds of the twentieth century. And among the patronage and culture of the best and the grandest of which human nature has hitherto shown itself capable ranked the special recognition of the healer and his art. The second—if not the first—of Egypt's monarchs, whose name and place have been transmitted to reading posterity, is said to have written with his own hand a work on human anatomy. This volume was, accordingly, composed at a date variously estimated as six to *nine thousand years* antecedent to the opening of the present era. To those who are already acquainted with such an elementary fact of Egyptian record, it is not a matter of surprise—although it may be for gratification—to learn that: "The first evidence of definite inquiry, in any degree worthy to be called scientific by a body not specially educated for, and devoting their lives to, medical service, occurs in the early history of Egypt." The country whose autocratic monarch writes anatomy, and reads and studies physiology and therapeutics, is sure to be furnished with a host of enthusiastic students of the mysteries of the healing art. As Dr. Caton observes, "Sanitation was to them the first of the sciences."

The Medicine God of the Egyptians in the golden era of their pioneer civilisation was I-EM-HOTEP ("he who cometh in peace"). The learned lecturer surmises that this subject of curative apotheosis was "probably a priest of Ra, the Sun-God"; and we entertain no doubt of the accuracy of this view. In every "Natural Religion" the God of the Source of Light and Heat is also—and for very obvious reasons—the God of Health and Healing; and his priest is, as a necessary consequence, the first recognised practitioner. A grateful posterity comes in time to identify the copy with the original, the messenger with the hypothetical master. The cult of I-EM-HOTEP appears to have been established first at Memphis; and thither came the maimed, and the lame, and the blind Egyptian of old in the hope of being made whole, as did the Greek to the temple of Asklepios at Epidaurus—thousands of years afterwards. And the original divine healer of Egypt was distinguished not only as a physician, but as an alchemist, an astronomer, an architect, and an administrator. It is hardly necessary to add that he was a magician. The wondrous Temple of Edfu is said to have been originally founded by this pioneer healer.

One of Dr. Caton's special aims in this Oration is to show that the ancient Egyptians attained to some knowledge of the circulation of the blood. Their primary knowledge of anatomy must have been maintained, to some extent, even by the data afforded by the practice of embalming alone. This specially applies, of course, to visceral anatomy, and to that of the great blood-vessels. The lecturer quotes from Ebers's Papyrus: "When the breath enters the nostrils it penetrates to the heart and to the internal organs, and supplies the whole body abundantly." He then proceeds to observe, in way of comment: "This idea that certain of the vessels convey air, you will observe, is identical with the Greek conception and probably even its source." If the reader will now, at our suggestion, substitute the word *oxygen* for "*breath*" in the quotation, he will find the conception fairly orthodox even in presence of the search-lights of twentieth-century science. And we freely guarantee the defence of the position that the use of the more chemical term is justifiable. The statement that physiologists, &c., down to the time of Harvey's discovery, believed that arteries carried *air* only, is a preposterous untruth; whose impregnability seems to be almost secured by its colossal magnitude. Of twin parentage with this statement is that so usually made in English text-books of surgery that Ambroise Paré was the first surgeon who ligatured arteries for the arrest of hæmorrhage. Even if true, this statement would, at least, prove that the great French surgeon knew—before William Harvey's "discovery"—that arteries contained blood, not air. But a glance at Paré's own work shows that his only claim in this direction lies in the fact that he recommended the resuscitation of GALEN'S PRACTICE (!) of using the ligature for the arrest of arterial hæmorrhage, instead of the more cruel and less reliable forms of cauterisation which were then in vogue. So that the encyclopædic physician of Pergamos tied arteries - *not* for the purpose of allowing the air to escape!! Surely no anatomists ever were more fully cognisant of the fact that arteries contain red blood than were Erasistratus and Herophilus (of "torcular" fame), one of whom is said to have *vivisected* no fewer than 600 criminals in a single year! The number may be an exaggeration, but there is no reason for doubting the central fact. In presence of such certainties, the preposterous notion that ancient and mediæval physicians all laboured under the delusion that arteries were air-conveying tubes—based, as it pretty surely was, on a misinterpretation of the etymology of the word artery - should be dismissed for ever from medical history. But we know that an old falsehood dies hard.

Dr. Caton also does good work in the concluding section of this little volume, by emphasising the vast importance of minimising the work of the heart at the outset of every attack of endocarditis. This is the only rational ground for hope of a complete arrest and cure of the disease and its consequences. We will conclude by saying that we feel a deep debt of gratitude to Dr. Caton and to all concerned in the production of this beautifully printed and beautifully illustrated booklet, for the instructive treat which they have afforded us in its perusal.

Meals Medicinal: with "Herbal Simples" (of Edible Parts). Curative Foods from the Cook, in place of Drugs from the Chemist. By W. T. FERNIE, M.D., Author of "Herbal Simples," "Animal Simples," "Kitchen Physic," &c., &c. Bristol: John Wright & Co. London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd. 1905. 8vo. Pp. xxii + 781.

SOME practical philosophers have been known to claim for cookery the foremost position among the sciences; and if the reader is not of that opinion already, he will find a copious array of data in the volume now before us for an elaborate defence of that statement. The matters gastronomical discussed in the pages of this handsome and beautifully-printed octavo volume are placed in alphabetical order, and range from *Absinthe* to *Yeast*. There is also at the close a full index of: "Diseases and Minor Ailments, with dishes and drinks (of medicinal parts), proper and sufficient for the curative treatment of each Malady." Some readers on perusal of these headings may be disposed to regard the claims advanced by the author respecting the collective efficacies of the items of his therapeutic armamentarium as diverging from the pathway of scientific rectitude into that of imaginative eccentricity; but we would suggest that he may do well to reserve the final construction of his personal opinion till he has read, marked, learned, and inwardly digested the vast amount of material which Dr. Fernie has collected with such laborious and conscientious care. Science and literature, old and new, have been made to furnish their most instructive and most decorative items for the building and ornamentation of the structure which we have just examined. The vegetarian and the teetotaller will here find some of the best existing texts for their popular lectures and diatribes; the critical adept in scientific cookery, and the appreciative connoisseur of the products of the most famous vineyards, will also find the most trustworthy available data of their respective specialities collected within the pages of this volume. "Eat, drink, and ——" was the tripartite motto of the famous "royal sage"; which included, in his opinion and experience, the three essentials of human existence. Some modern versifier tells us that

> "We may live without poetry, music, or art,
> We may live without conscience, and live without heart,
> We may live without friends, we may live without books;
> But civilised man cannot live without cooks."

Cynics may, perhaps, incline to think that the accumulation of such a mass of data, on such a subject, is but a forcible indication of the fact that the rotating wheel of human evolution is speeding fast through the closing quadrant of its (now *devolutionary*) course; and that we, over-civilised products of modern cookery, are displaying but too surely the indications of return to the animal types from which we sprung. Whatever may be the final judgment of the scientific public on these questions, we can assure our readers that they will find a vast store of very interesting and instructive matter in this volume.

Guy's Hospital Reports. Vol. LIX., being Vol. XLIV. of the Third Series. London: J. & A. Churchill. 1905. Pp. xxxi + 421.

As usual these reports are interesting. W. H. Bowen, M.D., deals with "Traumatic Subdural Hæmorrhage," adding seventy-two abstracts of cases. T. E. Holmes, M.D., reports on "the Behaviour of Leucocytes under the Influence of Certain Bacterial and other Substances." A large number of experiments were tried. Dr. Holmes considers they bear out the suggestion that in rabbits the polynuclear leucocytes are chiefly responsible for the destruction of toxic products and living bacteria, while the mononuclear leucocytes deal chiefly with non-toxic matter and nutritive substance.

Dr. Owen Richards contributes an important 116-page article on "Growths of the Kidney and Adrenals," including particulars of seventy cases, and an excellent bibliography. He writes in his summary:—"Clinically both renal and adrenal growths fall into two classes—one rapid, diffuse, disseminating early, and affecting the general health; the other, slow, encapsuled, disseminating late and usually by the blood stream, and giving rise to pain, tumour or hæmaturia for some time without other symptoms. The essential difference between these classes is probably that the latter consists of those growths (whatever their structure) which exist as innocent tumours for some time before they become malignant, whereas the former are malignant from the start. Since in certain kinds of tumours, such as the adrenal rest growths, a benign stage is the rule, whilst in others, such as pelvic carcinoma, it is the exception, it is natural that the majority should impress their secondary characters on the class as a whole. Consequently we find the latter class showing the same preference for dissemination by the blood stream that is shown by the adrenal rest growths, but less absolutely. . . . There are grounds for thinking that growths of an adrenal type are relatively more likely to run a slow and favourable course."

A. R. Thompson, F.R.C.S., gives "a collection of cases in which the operation of excision of the hip-joint has been performed for disease of the joint," and traces out the after history. About a third ended in complete recovery, but the best result—a useful joint, with free mobility, and without any sinus—only fell to the lot of five.

International Clinics. Vol. III. and IV. Fourteenth Series. London: Lippincott. 1904. Pp. 302 and 314.

About half of the first of these volumes is devoted to lectures on syphilis, which touch on diagnosis, symptoms, and treatment. Gottheil (New York) writes strongly in favour of the hypodermic administration of mercury; he employs an oily suspension of salicylate of mercury. On the other hand, Fournier (Paris), while allowing that hypodermic methods are useful in certain cases, is opposed to their employment as a routine treatment. "Our great aim," he writes, "with an ordinary case of syphilis should be to get the patient to treat it for the necessary length of time; this one will never accomplish with the injection method."

Dr. Duncan writes on scurvy, and gives a full account of the various theories of its causation, but does not say if he has made up his own mind on the subject. There are papers on lumbar puncture, umbilical hernia, diabetes, and other subjects, which do not appear to call for special notice.

Volume IV. contains several papers on the nature and treatment of lateral curvature of the spine, illustrated by many figures of patients and of various kinds of apparatus, some of which are appalling in their complexity. The symptoms and treatment of Glenard's disease, the operative treatment of constipation, functional heart murmurs, and other subjects are discussed. One of the most important papers is one by Dr. Craig, of the U. S. Army, on amœbic infection, an important and obscure subject.

Medical Electricity: a Practical Handbook for Students and Practitioners. By H. Lewis Jones, M.D. Fourth Edition, with Illustrations. London: H. K. Lewis. 1904. Pp. 536.

The demand for a fourth edition speaks for itself, and makes superfluous a detailed notice of this well-known work. Suffice it to say that the book has been carefully revised, enlarged, and brought up-to-date.

The utilisation of current from the mains for medical and surgical purposes is dealt with at length in a special chapter. The portion which deals with X-ray work has been amplified, and a chapter on high frequency currents has been added. In speaking of the therapeutic uses of high frequency currents in diseases of the skin the author is perhaps more optimistic than the facts warrant.

The book concludes with an interesting section upon radium, its action, physiological effects, and therapeutic value; and we can cordially recommend the volume to our readers as a well written and reliable guide to the therapeutic uses of electricity.

Saline Therapy: being Part V. of several Clinical Treatises on Disorders of Metabolism and Nutrition. By Dr. C. von Noorden and Dr. C. Dapper. Bristol: J. Wright & Co. 1904. Pp. 92.

Professor v. Noorden's writings always appeal to us as marked by good sense and moderation of tone. Yet he is by no means loath to protest vigorously against what he believes to be idle or merely superstitious assertions.

Surely he is right in saying that the curative effect of saline mineral waters cannot be gauged according to a simple formula, and he justly scoffs at the local pamphlets published at watering places, such as Kissingen, Homburg, &c. For, in most of these *brochures*, one-sided dietetic schemes are oracularly laid down, and invariably the saline water is put in the first place, and the disease and the patient are assigned the second place.

The present small work represents the conjoint investigations of v. Noorden and Dapper. These gentlemen endeavour to answer certain questions respecting the use of saline (mainly sodium chloride) mineral waters by direct observation of their effects upon patients under their own care. The therapeutic results are somewhat conflicting and, in so far, disappointing. It is at least clear that the use of the waters usually does no harm to the numerous sufferers from gastric catarrh who frequent watering places.

Drs. v. Noorden and Dapper sensibly conclude that the administration of saline mineral waters does not call for any particular diet. There is, above all, no reason why large quantities of fat should not be given in suitable cases to patients who are drinking certain mineral waters. Nor is there any urgent reason for forbidding the use of raw fruits, vinegars, salads, &c., in specified cases.

Neither the metabolism of the proteids nor the excretion of uric acid is materially affected by saline mineral waters. What will the balneologists say to all this heresy ?

Examination of the Urine: A Manual for Students and Practitioners. By G. A. SAXE, M.D., Philadelphia: W. B. Saunders & Co. 1904. Pp. 391.

THERE is now a considerable choice of text-books on urinary chemistry and its applications to medicine, and there is no excuse for the lamentable ignorance of the subject which is still unhappily too common.

Dr. Saxe's text-book does not call for a detailed notice, and it contains little that is not to be found in other manuals upon the same subject.

The book is subdivided into four parts :—

Part I. deals with General Considerations.

Part II. Chemical Examination of the Urine.

Part III. Microscopical Examination.

Part IV. Diagnosis of Urinary Diseases.

As a rule the text is clearly and tersely written, but there are some serious inaccuracies, and we have noted a few extraordinary statements—*e.g.*, at p. 19, in the list of constituents of normal urine, we find this sentence :—" Fatty and *other nitrogenous substances* " (*sic !*), and in this group are enumerated—" Fatty acids : oxalic, lactic, glycerophosphoric acids, and a very minute amount of certain carbo-hydrates (sugars) " (*sic ! !*).

P. 30.—The odour of normal urine " is due to the presence of volatile acids—phenylic, taurylic and damaluric—in very minute quantities, and *partly also to urea* " (*sic !*).

It is needless to draw attention to other blemishes, and we regret that we cannot commend the book as a trustworthy guide.

Numerous sets of questions are appended to the chapters, intended, doubtless, for self-examination.

Premature Burial and How it may be Prevented. With Special Reference to Trance, Catalepsy, and other forms of Suspended Animation. By WILLIAM TEBB, F.R.G.S.; Corresponding Member of the Royal Academy of Medical Sciences, Palermo; Author of " The Recrudescence of Leprosy and its Causation " ; and COL. EDWARD PERRY VOLLUM, M.D.; Late Medical Inspector U. S. Army; Corresponding Member of the New York Academy of Sciences. Second Edition. By WALTER R. HADWEN, M.D.; Licentiate of the Royal College of Physicians, London ; Member of the Royal College of Surgeons, England; Licentiate of the Society of Apothecaries, London. London: Swan, Sonnenschein & Co., Limited. 1905. 8vo. Pp. 451.

THE publication of a special clause of the will of the late Miss Frances Power Cobbe recently brought the subject of the dread of the possibility of premature burial into a prominent position in English journalism. Mr. Tebb stated, in the preface to his first edition of this work, that " a distressing experience in the writer's family many years ago brought home to his mind the danger of premature burial, and led ultimately to the careful study of a gruesome subject, to which he has a strong natural repugnance." The question is, of course, one of which every aspect should be familiar to the medical practitioner; and, accordingly, the volume before us, into whose pages the authors have carefully gleaned and garnered all available information on the subject, should be perused by all our readers. The unquestionable uncertainty of all signs of death before actual decomposition cannot be too strongly emphasised, even although—as we believe—the dangers of premature burial have been greatly exaggerated by most of the faddists (as they usually have been) who have dealt with the subject in print.

The Preparation and After-treatment of Section Cases. By W. J. STEWART M'KAY, M.B., M.Ch., B.Sc.; Senior Surgeon to the Lewisham Hospital for Women and Children, Sydney; Late Surgeon to the Benevolent Asylum Maternity Hospital, Sydney; Fellow of the British Gynæcological Society, and of the Obstetrical Society of London. London: Baillière, Tindall & Cox. 1905. Pp. 651.

THE object with which the volume before us has been written is that of making matters easier for those beginning abdominal surgery. The author himself had an excellent early training when he was assistant to the late Mr. Lawson Tait. Subsequent to leaving Tait, he then visited some thirty different *clinics* on the Continent, and took notes of the preparatory methods and after-treatment. On completing his first 100 abdominal sections, after being appointed to the Lewisham Hospital, he outlined this essay, making alterations and additions as years brought increased experience. The beginner will certainly not be able to complain of lack of instructions and details regarding preparatory treatment. Several methods of cleaning the hands, preparing the operation area, sterilising sutures, &c., are described fully, while Dr. M'Kay then generally gives his own practice. Whether the beginner should always follow the author's advice is questionable. With respect to rubber gloves, the author uses them only under certain conditions; they are looked upon by him as expensive and more or less of a luxury. This method of looking at the use of rubber gloves in surgery at present would scarcely commend itself to surgeons in this country.

The after-treatment is fully described, and all complications that may subsequently arise are mentioned and their diagnoses and treatment are outlined. To many of his statements we cannot subscribe. His classification of peritonitis is questionable, while the statement that the treatment of commencing peritonitis is summed up in the one word—purgation—is one with which we cannot quite agree, believing, as we do, that when peritonitis follows abdominal section it is certainly septic in its origin.

Under the heading "operative treatment of tympanites and pseudo-ileus" we find the author advocating puncture of the bowel through the abdominal wall with a fine trochar as a measure which should be given a fair trial. "We would suggest," he says, "that the puncture should be made in the region of the cæcum, for here a small extravasation of fæces will be well borne by the peritoneum." He says that "to urge that the escape of a little fæces will make the patient's condition more serious is to forget the fact that the fæces have little to do with the result, the danger lies in the bacteria contained in the fæces, and if we are to trust our present knowledge, we must admit that, as the bowels are becoming paralysed, the germs are always making their way through the intestinal walls, therefore a few more in the peritoneal cavity will have little influence on the ultimate result."

Statements such as those mentioned ought to suffice to show that we should not blindly accept the author's conclusions as sound on all points, irrespective of his large personal experience and extensive early training, nor can we, for these reasons, recommend the book other than as one in which much that is good will be found mingled with much that—we hesitate not to say it—is bad.

Landmarks and Surface Markings of the Human Body. By Louis Battie Rawling, M.B., B.C. (Cant.), F.R.C.S. (Eng.); Senior Demonstrator of Anatomy, St. Bartholomew's Hospital; Assistant Surgeon to the German Hospital, Dalston; Hunterian Professor, Royal College of Surgeons, England. With 29 Illustrations. London: H. K. Lewis. 1904. Pp. viii + 76.

The book before us is intended to fill a gap in the series of text-books that are offered to the medical student. That the efforts of the author will be a help to the student in what, after all, is one of the most important practical points in anatomy no one will deny. In the book before us these practical points are set forth in a convenient form. Scientific anatomy is unquestionably of immense interest, but for the ordinary general practitioner a good sound knowledge of the practical side of the subject, such as he meets with daily in his practice, is of far greater importance. It is largely due, in our opinion, to the stress laid by professors in teaching scientific anatomy at the expense of that which is simpler, but of more practical utility in after-life—such as topographical anatomy—that the ordinary average student takes so little interest in the subject. It is refreshing to see that this subject is being recognised as of greater importance, but then the author is a practical surgeon and not a pure scientific anatomist.

The illustrations are everything that could be desired, and we congratulate the author and strongly recommend his work to every student of medicine.

Cancer and its Treatment. Being the Bradshaw Lecture delivered before the Royal College of Surgeons of England on December 1st, 1904. By A. W. MAYO ROBSON, D.Sc., F.R.C.S. Eng.; Senior Vice-President of the College. Published by request of the Council of the Royal College of Surgeons of England. London: Baillière, Tindall & Cox. 1905. Pp. 69.

READERS of the medical journals are already acquainted with the subject-matter of this lecture—an abstract having appeared in the *British Medical Journal* directly after the lecture was delivered. The lecturer has treated the subject as fully as could be expected, but unfortunately he could not add anything to our knowledge as regards the ætiology of the disease, and consequently nothing new as regards treatment. Early diagnosis and early and extensive operative interference are at present our only hopes towards obtaining satisfactory results. To educate the public to show any abnormal swelling or ulceration to a competent surgeon, without delay, at present seems to be the only method by which satisfactory results can be expected from treatment, but unfortunately any attempt to so educate the public exposes those who endeavour to do so to the accusation of self-advertisement.

We can commend the study of this *brochure* to every member of the profession—physician and surgeon alike.

An Atlas of Dermatology. Shewing the Appearances, clinical and microscopical, normal and abnormal, of Conditions of the Skin. By MORGAN DOCKRELL, M.A., M.D. (Dub. Univ.); Senior Physician and Chesterfield Lecturer on Dermatology to St. John's Hospital for Diseases of the Skin. Longmans, Green & Co., London, New York, and Bombay. 1905. Folio.

WHILE there is no lack of modern Atlases of Skin Diseases, we hail with satisfaction the appearance of the handsome volume before us. Its author is an Irishman, who has made a name for himself in London, and with much propriety he dedicates his work to the Provost of Trinity College, Dublin, being himself a graduate in Arts and Medicine of the University of Dublin.

A distinctive feature in Dr. Dockrell's Atlas is, as he points out in the Preface, the presentation, for the first time, of the microscopical changes in the skin side by side with those changes which may be seen by the naked eye. This claim is true so far as British works on diseases of the skin are concerned, but some Continental authors have anticipated Dr. Dockrell. Each illustration reproduces the photograph of an actual patient, and the accompanying microscopical section, taken from the same patient, shows in each case the changes present in the most typical portion of the eruption.

The author expresses in suitable terms his acknowledgment to Mr. Colhoun, the histologist to St. John's Hospital, who took the photographs and made the sections reproduced in the sixty Plates which compose the Atlas. Of these the first three show the microscopic appearances presented by the normal skin.

In Plate IV. the various forms of cells met with in certain skin affections are shown.

Many of the Plates are both artistic and true to nature. We cannot say as much for others, notably the illustrations of varicella and variola (Plates XLIV. and XLV.), and of purpura (Plate LVII.).

In Plate XXXV. Dr. Dockrell illustrates a case of what he calls "Hyaline Degeneration of the Skin." The ducts of the sweat glands are dilated and filled with hyaline material. In "colloid millium," the ducts are not dilated and their contents are colloid not hyaline. "Millium" of course should be "milium."

The work is splendidly brought out by the publishers. It is costly, the net price being fifty shillings.

A Text-Book of Clinical Diagnosis by Laboratory Methods. By L. NAPOLEON BOSTON, A.M., M.D., Associate in Medicine and Director of the Clinical Laboratories, Medico-Chirurgical College, Philadelphia. With 320 Illustrations, many of them in colors. Philadelphia—New York—London: W. B. Saunders & Co. 1904. 8vo. Pp. 549.

A SPECIAL feature in this work is the multiplicity and excellence of the illustrations, which would alone make it valuable as a book of reference. There is one exception—Plate 14, which shows the method of applying heat when using Fehling's reagent for glucose—this drawing is rough in execution and the colours are not true to nature.

In the "Introduction" on the microscope and its use, the author perhaps takes it too much for granted that the student understands the mechanism of the instrument. He plunges *in medias res* about "a two-thirds, a one-sixth, and a one-twelfth oil-immersion objective, and a sub-stage condenser." This assumption of knowledge on the part of the reader runs indeed through the whole book. For example, Charcot-Leyden crystals are mentioned in several places, in connection with the fæces, semen, myeloid blood, sputum and nasal secretion, and yet their nature is never as much as hinted at. Again, such terms as cryoscopy and pyknometer are used without any explanation of their meaning. This probably does not matter so far as "Practitioners and Laboratory

Workers" are concerned, but the book is "for the use of students" also.

The scope of the work may best be gathered from the Preface, which contains a very fair summary of the contents in the following sentences:—

"Special attention has been given to outlining in progressive steps the various procedures in clinical technic, such steps being illustrated whenever possible. Besides the detailed descriptions of methods of examination, the diagnostic significance of the clinical findings is given under special headings and is frequently accompanied by tables of differentiation.

"In the chapter on the blood the more recent methods for examination and staining are described and illustrated by original drawings; and the subject of serum-diagnosis is carefully considered. The protozoan parasites known to invade the blood of the lower animals are described in connection with the malarial parasite.

"In the chapter on the urine the newer methods for the estimation of sugar, Bence-Jones' albumin, uric acid, and purin have received consideration, and the whole chapter is illustrated by a large number of original half-tones and colored plates.

"An unusual amount of space is given to the consideration of Animal Parasites, Diseases of the Skin, Transudates and Exudates, and the Secretions of the Eye and Ear. Inoscopy and Cyto-diagnosis have been briefly considered."

The section on Animal Parasites in the chapter on Fæces (or, as the word is spelt in the book, "Feces") is particularly full and good. In Chapter V., on the Sputum, we meet with the novel word "Stycosis" under the heading "Pneumoconiosis" (page 450). "Stycosis," writes Dr. Boston, "is a condition in which the sputum is seen to contain particles of lime, plaster-of-Paris, &c. The condition has been described at length by A. Robin." Anthracosis, chalicosis and siderosis we know, but what is the derivation of stycosis ?—a word which, by the by, we cannot find in any medical lexicon to which we have access. It certainly is not of Greek origin like the other terms.

There can be no doubt that Dr. Boston's work will fulfil its *rôle* as a "Text-Book of Clinical Diagnosis by Laboratory Methods."

Manual of Hygiene for Students and Nurses. By JOHN GLAISTER, M.D., D.P.H. (Camb.); Fellow of the Faculty of Physicians and Surgeons of Glasgow; Licentiate of the Royal Colleges of Physicians and Surgeons of Edinburgh; Fellow of the Royal Society of Edinburgh; Fellow of the Chemical Society; Fellow of the Sanitary Institute; Professor of Forensic Medicine and Public Health in the University of Glasgow; Examiner in Forensic Medicine and Hygiene to the Royal Colleges of Physicians and Surgeons of Edinburgh and the Faculty of Physicians and Surgeons of Glasgow for Diplomas in Medicine and Surgery, and Examiner in Public Health for the Diploma in Public Health of these United Corporations, &c. Second Edition. Edinburgh: E. & S. Livingstone. 1905. Pp. 403. With diagrams and plans.

THIS work, the larger portion of which appeared originally as a series of papers in *The Hospital*, is intended to meet the needs of students studying for diplomas in medicine and surgery, as well as for nurses, has now reached its second edition. The chapters on food are excellent, as is also the description of the methods of the bacterial treatment of sewage, based on the observations of Abbé Mirgno, and developed by Dibdin and Cameron.

The book is admirably adapted to fulfil its purpose.

The Naked-Eye Anatomy of the Human Teeth. By THOMAS E. CONSTANT, L.R.C.P. Lond., L.D.S., M.R.C.S. Eng. Bristol: John Wright & Co. 1905.

THIS manual adds one other to the many scientific works which have—within the last decade—in seeing the light, helped to enrich and elevate the Dental Profession.

The author has very clearly shown the surface anatomy of the teeth and jaws, going minutely into all markings, &c., useful in distinguishing the various members of the series. He has illustrated his points by a number of beautiful photographs—the most perfect we have ever seen. The articulations of the jaw; the bony framework, jaws and teeth, at various periods, are all described in sequence. There is also a special appendix concerning the movements of the mandible, on which subject, if we mistake not, Mr. Constant has spent much study.

No student or practitioner can fail to reap real benefit from a perusal of this book, and we have nothing but praise for it and its simple lucid style, as also for the truly excellent illustrations embellishing its pages throughout. In the matter of treatment it is original and *sui generis*.

La Revue Internationale de la Tuberculose: A Monthly Review, published in French, Italian, Spanish, and English. Paris: rue Rougement 9.

THIS journal is a sort of "*Review of Reviews*" dealing with the tuberculosis problem, and provides interesting and instructive articles bearing on the subject from many sources. It starts its fourth year of publication with an innovation, English being now introduced amongst the medley of languages which appear in its pages. The editorship of the English portion has been entrusted to Count Ivan Tolniewski, of London. We wish him every success in the task he has undertaken, and congratulate him on having obtained for the January number a very readable article on "The Public House as a Source of Phthisis," from Dr. Arthur Ransome.

Transactions of the American Surgical Association. Volume 22. Edited by RICHARD H. HARTE, M.D., Recorder of the Association. Printed for the Association for sale by Wm. J. Dornan, Philadelphia. 1904. Pp. 397.

THE volume before us, though not more than two-thirds the size of the volumes for the preceding three or four years, contains a variety of interesting and instructive papers. The standard of excellence of the various communications has been well maintained. As in former years, many of the papers of which this volume is composed have appeared from month to month in the *Annals of Surgery* and other American journals, consequently detailed notice of them here is unnecessary.

PART III.

MEDICAL MISCELLANY.

◆

Reports, Transactions, and Scientific Intelligence.

◆

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—**Sir Thornley Stoker**, M.D., F.R.C.S.I.
General Secretary—**James Craig**, M.D., F.R.C.P.I.

SECTION OF SURGERY.

President—**Arthur Chance**, Pres.R.C.S.I.
Sectional Secretary—**Edward H. Taylor**, M.D., F.R.C.S.I.

Friday, February 24th, 1905.

E. H. **Bennett**, M.D., in the Chair.

Exhibits.

Mr. L. A. Byrne exhibited a patient after operation for epithelioma of the tongue; also the part removed.

Sir Lambert H. Ormsby exhibited a patient whose olecranon had been wired after fracture.

Mr. G. Jameson Johnston exhibited a patient who had the power of voluntarily producing a partial dislocation of the knee.

Mr. W. I. de C. Wheeler exhibited an extension apparatus for fractured femur.

Mr. Blayney exhibited (*a*) parts removed in the treatment of acute intussusception, and (*b*) malignant disease (colloid cancer) of the large intestine.

The Application of Plaster of Paris to Fractured Femur, facilitated by a New Apparatus.

Dr. W. I. de C. Wheeler exhibited an apparatus designed by himself to facilitate the application of plaster of Paris, either as a primary dressing, to fractures of the femur, or at any period before union had taken place. He afterwards read a communication describing the machine, with lantern illustrations. It consists essentially of two gates swung on an upright iron bar on which rests a padded crutch to receive the perineum. The machine is so arranged that accurate extension can be kept up during the entire operation of encasing the leg and pelvis in plaster. At the same time (extension being applied by means of a clove hitch attached to the ankles and rollers surmounting the end of the gates) abduction and adduction can be made relatively equal, and so the errors arising from obliquity of the pelvis avoided. The amount of extension put on can also be estimated by two Salter's balances, which intervene between the rollers at the end of the movable gates and the clove hitch attached to the legs of the patient. Five or six cases had been treated on the apparatus with success. The ideal cases are those near the middle of the shaft. Extension is put on until both legs are the same measured length, no errors being likely if the gates are open to the same extent; this latter measurement can be read off a graduated bar provided for the purpose. The plaster is rapidly rolled on, and very free access to the limbs is obtained. One assistant is alone necessary. Special provision is made for the surrounding of the pelvis with the roller bandage, and this can be done without any hoisting of the patient from the table by a simple manipulation of the apparatus. The device is very simple, can be made by any ironmonger, and is also inexpensive. In suitable cases the injured limb is encased with the pelvis, and also the sound limb as far as the knee-joint, leaving a strong wedge of plaster in the perineum. The patient is allowed to move about on crutches in a few days, and frequently no shortening results.

MR. E. H. BENNETT was of the opinion that the apparatus was probably useful in general hospital work, but could hardly be used by country practitioners.

MR. TOBIN thought that Mr. Wheeler's method would be useful in the treatment of fractures of the femur in field service.

MR. W. S. HAUGHTON considered the device both simple and efficient. It saved labour, made the subsequent nursing simple, and saved the surgeon paying numerous visits.

MR. KENNEDY also discussed the communication.

MR. WHEELER, in reply, stated that the apparatus was very portable, was by no means difficult to make, and cost about two pounds.

Oblique Fracture of the Tibia.

Mr. Edward H. Bennett read a paper on this subject, and illustrated his observations by a series of skiagrams. He stated that fracture of the tibial shaft alone was rare as a result of indirect violence, although common enough when the violence acted on the bone directly. Oblique fractures of the central portion of the shaft without accompanying fractures of the fibula are rare. He then related the history of a case which recently came under his notice. The patient, a young girl, aged fifteen, jumped from a height of about twelve feet on to the ground, and immediately fell backwards. Although she was able to stand up she could not put any weight on the injured limb, or attempt to walk. On being brought to hospital soon afterwards she was found to be suffering from pain, and complained of loss of power in the limb; but it was not possible to obtain crepitus, or to detect any evidence of abnormal motion in the limb. An X-Ray examination, however, revealed the presence of a fracture. It was very oblique, traversing almost four inches of the shaft of the tibia in its middle segment. Its direction was from above and without, downwards and inwards. The progress of the case was uneventful, and union was perfect in the ordinary time. The absence of deformity was explained by the integrity of the fibula. The skiagrams obtained from this case afforded the only example he had seen of oblique fracture of the shaft of the tibia only from indirect force.

Mr. Haughton expressed himself deeply indebted to Mr. Bennett for the information he had derived from him on the subject of fractures. In studying the long bones stereoscopically one found that the oblique direction of the lamellæ was the rule and not the exception, and that when one regarded fractures from the anatomical standpoint it could be seen that their planes ran parallel to the direction of these bone lamellæ.

The communication was also discussed by **Mr. Tobin**, **Mr. Edward H. Taylor**, and **Mr. Jameson Johnston**.

Some Cases of Joint Excision.

Mr. Kennedy read a paper on the above. One case of excision of the knee was remarkable, as the joint was riddled with sinuses, fixed at right angles for years, and the patient showed symptoms of well marked phthisis, a cavity being present in one lung. Nevertheless recovery quickly followed operation, the lung healing rapidly, and the patient was enabled to get about. In connection with this case Mr. Kennedy dwelt on the importance of fixing the bones together, after excision of the knee, by Tobin's clamps or by suturing. A case of excision of the shoulder and one of excision of the elbow were quoted as examples of dry caries of the articular ends of bones. Although in each the disease was present for years, not a trace of suppuration was present in either. The diagnosis was difficult, and was made clearer by skiagraphy. Mr. Kennedy also quoted the case of a child, aged four years, who had met with an accident producing an epiphyseal separation of the upper end of the humerus. At the operation the articular head was found completely detached from the rest of the epiphysis. The head was removed, and the remainder of the epiphysis sutured to the diaphysis. Complete union followed, although fifteen months had elapsed from the time of the accident to the operation. The child has perfect motion in her arm, and the growth of the limb has not been interfered with.

MR. BENNETT congratulated Mr. Kennedy on the first of his cases—viz., that in which an excision of the knee had been successfully performed in a patient who had symptoms of a phthisical cavity in one lung.

MR. TOBIN had seen some of Mr. Kennedy's cases. The first of these, which had just been recorded, was one which few would have cared to undertake.

MR. HAUGHTON discussed the diagnosis of early tuberculosis of joints by the aid of X-rays, and gave it as his opinion that a positive diagnosis could be made if the disease had been present for some weeks. Stereoscopy was of great value in these cases. By its aid areas of rarefaction could be discerned, and their true relations to each other and to the joint made out.

In reply MR. KENNEDY expressed his sense of obligation to Mr. Haughton for his hints as to diagnosis, as cases often cropped up in which it was far from easy to say if bone disease was really present.

SECTION OF MEDICINE.

President—W. J. Smyly, M.D.
Secretary—R. Travers Smith, M.D.

Friday, March 3, 1905.

Sir John Moore, M.D., in the Chair.

Exhibits.

Dr. W. J. Thompson—A case of alopecia affecting the entire scalp of a boy.

A Case of Hysterical Chorea.

Dr. James Craig exhibited a case of hysterical chorea in a girl twenty-two years of age. There is no neuropathic family history obtainable. She was in good health, and was occupied as a laundress until two years ago, when she found herself unable to write on account of a shaking in her right hand. The shaking then extended to her head. At the present time she has a rhythmical rotary tremor of the head—coarse in character, particularly when she is under observation, but at times much finer, and frequently not to be noticed at all. There are no contractions seen in the facial muscles. There is a fine tremor occasionally present in the hands, but arrhythmic contractions, inco-ordination or weakness of muscles, are not observed. There is an absence of any of the other manifestations of hysteria, nor is there any evidence of any organic disease of the nervous system. Rhythmic hysterical spasm is the better name for the condition, as the term chorea is misleading.

Dr. Bewley said that the case reminded him of other diseases. As to what was the pathological and anatomical basis underlying tremors we knew very little. Various conditions affecting the nerve-cells resulted in the production of these movements. For example, they might be present in old age or in diseases such as paralysis agitans, but what really caused them we did not know. As regarded prognosis he thought the patients' chances of recovery were poor.

Dr. Craig replied.

Sequel to a Case of Innominate Aneurysm reported in 1898.

Dr. Craig contributed a short paper on this case. [It will be found at page 350.]

Dr. Matson said the perforation into the œsophagus was interesting, and out of sixty-eight cases reported by one observer only one had terminated in that way. He had had a case in which perforation had occurred into the œsophagus, but in that case there were all the usual symptoms, and there was something to go on in making a diagnosis. What was the cause of the aneurysm in Dr. Craig's case, as his patient seemed to have been a healthy liver and to have none of the usual specific causes?

Dr. T. G. Moorhead said the case was very interesting, particularly from the fact that it pointed out that aneurysm, except in cases where there was trauma or some obvious cause, was a constitutional and not a local disease. The case also illustrated the fact that aneurysm had a tendency to recur, and what he might call the constitutional diathesis to aneurysmal dilatation.

Dr. W. J. Thompson said that about six years ago he showed a specimen before the Pathological Section of a case of a labouring man in middle life. He was very steady, and had never complained of pain or any trouble. While attending to his business he suddenly fell down and blood came from his mouth. On examination life was found to be extinct. The *post-mortem* showed the presence of an aneurysm, the size of a walnut, situated in the aorta about two inches above the cardiac end of the stomach. It had perforated into the œsophagus. There was no atheroma or disease of the heart.

Dr. Craig said that, with regard to the cause of the aneurysm, the patient was gouty, and attributed the start of the aneurysm to a strain received in lifting a press. The chief point of interest was that this enormous aneurysm could be lying in the thorax, and the patient be apparently perfectly well.

Three Cases of Pneumonia in Pregnancy.

Dr. Drury read a paper on pneumonia in pregnancy, illustrated by three cases with which he had met. These were all in the seventh or eighth month of pregnancy. The first had double apical pneumonia, the second double basal pneumonia, and in the third the right lower lobe was alone affected. In all three the pregnancy terminated during the disease, the children were alive up to or after birth, though death occurred soon after. When labour was completed the pneumonic symptoms appeared to be relieved, and the three patients made a rapid and excellent recovery. He pointed out that this complication of pregnancy appeared to be rare. The general idea that it was a very fatal combination was not in these cases borne out.

Dr. Ninian Falkiner said he considered the subject a most important one, and congratulated Dr. Drury on his successful treatment. He read the report of a case of his own, which appeared in the *British Medical Journal* of March 2nd, 1899. He also gave some statistics of the mortality in those cases. In England in 1901 the cases of death from pneumonia in pregnancy or childbearing showed a percentage of 3.42 of all the deaths of women associated with these conditions. In 1902 the percentage was 6.46, and in Ireland in 1902 it was 1.52 per cent. of all deaths definitely returned as either caused by or associated with pregnancy or childbearing.

Dr. Day said that, with reference to the question of pneumonia in pregnancy, his experience was that women who were young did not die. He had never had to use forceps in a case with fever. The child's chances of survival were very slight. Cases of abortion gave more trouble or cases in which the fœtus was not viable. Another curious error was that pregnant women did not get enteric fever ; this was very erroneous. He doubted whether a woman who was pregnant was less liable to get pneumonia than a non-pregnant woman. There was no reason why such patients should get cyanosis as long as one lung was free. What one had to treat was the fever and want of sleep—in other words, the nervous disturbance. There was also a certain amount of hypertrophy of the heart, and it was the heart which usually failed. In these cases no internal examination should be done, and the case should not be interfered with. One thing which made pneumonia peculiarly liable to cause abortion was the high temperature. He had seen small-pox also occurring with pregnancy, and it did not seem to interfere with the ordinary course of the disease. The same thing applied to measles and enteric fever. He thought it was important to have got these three cases together as emphasising the point that pneumonia was not such a dangerous complication of pregnancy as was usually supposed.

Dr. Neil said that delivery in these cases was usually very easy owing to the prematurity of the fœtus. He had seen also several cases in the last stages of phthisis in which the delivery was perfectly easy. He had seen a case of placenta prævia occurring in a patient who had advanced phthisis. She got over it well, and had a normal child afterwards.

Dr. Moorhead said he had had one case of pneumonia in pregnancy. The patient was a primipara, aged thirty-seven, and about four and a half or five months' pregnant. The whole of the right lung was involved. Convalescence was prolonged, and there was cyanosis from an early period and all through the fever. A perfectly healthy child was born at full term.

Dr. Drury thought that gynæcologists should pay more attention to the statistics of these cases. The tendency to abortion was not so great when the fever occurred at an early term, but in most cases, especially in the later periods, the fœtus was usually not retained.

SECTION OF OBSTETRICS.

President—**Alfred J. Smith**, M.B., F.R.C.S.I.

Sectional Secretary—**T. Henry Wilson**, F.R.C.P.I.

Friday, March 10, 1905.

The **President** in the Chair.

Specimens.

Dr. E. Hastings Tweedy—Tubo-ovarian abscess; Myoma of broad ligament removed by myomectomy; Mal-development of large intestine—enterostomy; Ovarian cystoma.

Dr. Purefoy thought the first specimen was a very interesting one from the point of view of the possibility of making a correct diagnosis before operation. He did not quite agree that the fact that a woman was pregnant three months before negatived double pyosalpinx. The specimen from the infant was also a very interesting one, especially as to what led to its development. Speed in operation was always important. He had read with surprise that Spencer Wells, even in his day, could do an ovariotomy in fifteen minutes.

Dr. Jellett said the intestinal specimen was one of great interest, and he described a somewhat similar case which he had operated on whilst in the Rotunda Hospital. The child was born with a largely distended abdomen, and passed no meconium. He opened the abdomen in the middle line, and came straight into a cavity, from which issued a large quantity of meconium. The child lived for a couple of days, and the *post-mortem* showed that the cavity was an enormously distended cæcum, beyond which there was practically no bowel.

Dr. Kirkpatrick said he had dissected the body of a new-born infant which had suffered from intestinal obstruction. The abdomen was occupied by a cyst or cavity containing meconium, and the small intestine opened into it. Below this dilated portion of the intestine there was a volvulus, below which the colon was contracted practically to a cord.

Dr. Hastings Tweedy, during his reply, said that in the ovarian case he had stitched the abdominal wall in three layers, and while performing the operation (which occupied twelve minutes from the first incision to the last stitch) he had no idea of working against time.

Dr. Henry Wilson—Fibro-myomatous tumour excised from labium majus; uterus removed by panhysterectomy for adenoma malignum.

Dr. Tweedy asked Dr. Wilson what had determined him to perform an abdominal rather than a vaginal operation.

Dr. Purefoy said that the first case was very interesting, partly on account of the great rarity of fibroid tumours in that locality, and also because, until the tumour becomes ulcerated, its real nature may be undetermined. Winckel mentions a case where the tumour, after remaining for seven years, eventually proved to be sarcomatous. He asked if any microscopic examination had been made of the tumour.

Dr. Wilson said that he now thought he might have operated by the vaginal route, but at the time, and the woman being a nulli-para, he had thought the abdominal operation would be easier.

Dr. Jellett showed an infant on whom cleidotomy has been performed in consequence of impaction of the shoulders at the pelvic brim. Traction failed to deliver, and so cleidotomy was performed. Traction still failed, and accordingly the posterior muscular attachments of the scapula were divided. This enabled the whole scapula and shoulders to move forward on to the chest, and delivery was then easily accomplished. The fœtus measured 45 cmm. round the shoulder girdle with the shoulders in their normal position, and 34 cmm. when compressed after the division of the bones and soft parts.

Dr. Horne said that that amount of hair was not uncommon. The case reminded him of a similar one which had occurred with him a year ago. The patient gave a history of the first labour being extremely difficult. He could find no distinct narrowing of any portion of the pelvis, and allowed her to go on to full term. The labour was very slow, and the head had to be extracted with forceps. He failed to deliver the shoulders by traction, and finally got his hand up on the posterior wall of the pelvis, and a finger into the axilla. After a great deal of traction he got down one arm, and completed delivery. He thought Dr. Jellett's operation a very ingenious one.

Dr. Purefoy said that one of the many points in the case was the way it illustrated the fact that pregnancy might be unduly prolonged, and the consequent increase in the size of the child might be serious. Some years ago he assisted at a case of delay in labour. The head was in the pelvis, and several attempts had been made to extract it, but in vain. He suggested waiting to allow moulding to take place. After some hours he attempted delivery with forceps, but could not move the head till he had perforated it. The extraction of the shoulders caused great difficulty until he passed a blunt hook into the axilla, and completed delivery.

Dr. Glenn thought the lesson to be learned from the case was that when a child could be lost by a skilled obstetrician one ought to look charitably on such accidents in the hands of the general practitioner. He asked Dr. Jellett—1. If he had tried a screwing motion with one hand on the back and one hand on the chest of the child to try and rotate it Occasionally this changed the position of the arms, and allowed of extraction. 2. Why did he not use Braun's blunt hook? Though quite aware of the danger of using this in unskilled hands, yet it undoubtedly has its uses. The period of gestation in most of these cases was over the usual period. He thought Dr. Jellett was to be congratulated on saving the mother.

Dr. Jellett, in his reply, said that the use of the blunt hook was extremely difficult and dangerous. In doing the cleidotomy he spent about three minutes over each clavicle and about five minutes in separating the posterior attachments of the scapula. There was no bruising of parts, and consequently the question of saving the mother did not arise, as her life was never in danger. The rotation of the body he considered an admirable suggestion. It did not occur to him, but probably would have if he could have got at the body. It might have brought about the same result as the division of the scapular attachments. In regard to the period of gestation, there certainly seemed, in this case, to have been a prolongation.

A Curative operation for Procidentia Uteri.

Dr. Hastings Tweedy read a paper on this subject, and called attention to a suggestion lately put forward to remedy this diseased condition. He did not believe that any procedure, having for its object the removal of the uterus and the entire closure of the vagina, provided a sound surgical remedy. He had on three occasions performed an operation that appeared to him on theoretical grounds to fulfil all the requirements of a complete cure in the worst conditions of prolapse. Briefly stated, the operation consists of opening into the abdomen, both in front of and behind the cervix. This enables the operator to grasp the broad ligaments between thumb and fore-finger, and protect the ureters and uterine artery, whilst the bases of the broad ligaments are denuded by stripping the vaginal mucous membrane of the lateral fornices from them. Ligatures are passed through these structures close to their pelvic extremities, and these ligatures when tied together in front of the cervix will cause the latter to be elevated in an upward and backward direction. The basal fibrous structures (Mackenrodt's ligaments) are still further secured in front of the uterus, in the neighbourhood of the internal os, by several fine sutures. The final steps of the operation consist of amputation of the cervix, anterior vaginal fixation of the uterus, and an anterior colporrhaphy, combined with a Hegar's colpo-perinæorrhaphy.

Dr. Glenn said that the original operator passed the stitch through the back of the cervix, and drew it upwards and backwards towards the promontory of the sacrum, the fundus falling forwards. An anterior fixation was also done.

Dr. Jellett said that in many cases of prolapse some form of operation was necessary. He was in favour of vaginal fixation, and some form of narrowing operation of the vagina. He had no dread of pregnancy afterwards, never having had any trouble. He had lately opened an abdomen in which anterior fixation had been previously done, and it had had excellent results. He thought that that operation, plus narrowing, was usually quite sufficient, and if not Dr. Tweedy's operation was an excellent one, as it was on a sound anatomical basis, and got the uterus anteverted, &c., and at its normal level.

Dr. Purefoy said that the subject was one of great interest, as some of those cases might be the starting point of a fatal illness. He had seen one case of peritonitis resulting from a case. With regard to the various structures which kept the uterus in position, there was some difference of opinion. In Dr. Savage's book there is a series of plates on the subject, and he demonstrates that the structures which chiefly prevent procidentia are the utero-sacral ligaments. The procedure which Dr. Tweedy had shown was in certain cases an excellent one, but was manifestly not suited to all cases of procidentia. Huguier pointed out that in many cases hypertrophy of the cervix was the cause of procidentia, and this could be dealt with by amputation of the cervix.

The **President** said that he had found the necessity for some reliable operation for procidentia. He had read the original description of the operation, but had thought it exceedingly theoretical. He had not seen how, in tying the sutures, one avoided compressing the ureters, and he was delighted to hear of Dr. Tweedy's favourable results. He was quite at one with Dr. Jellett with regard to the value of vaginal fixation—plus the ordinary colporrhaphy—in ordinary cases of prolapse. It gave very good results. He had also got good results from abdominal fixation.

Dr. Tweedy, in reply, said he was exceedingly obliged for the favourable way the Section had received the operation. He felt that there were great possibilities in it. Vaginal fixation was not sufficient in the worst forms of prolapse, and he was not at all so convinced as Dr. Jellett that the results of a subsequent pregnancy in all cases would be what one would like. The operation when performed in an ideal manner would give admirable results in pregnancy, but cases were met with in which, before the uterus could be brought forward, one had inflicted such injuries on it that firm adhesions would form. Like Dr. Purefoy, he had formerly attached enormous importance to the sacro-uterine ligaments, but he had now adopted the view that the ligaments he had pointed out were perhaps of more importance in keeping the uterus in proper position, especially in that of elevation. There was frequently a deep laceration of the cervix in bad cases of procidentia, and in such cases MacKenrodt's ligaments were probably torn.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by the EDITOR.

VITAL STATISTICS.

For four weeks ending Saturday, March 25, 1905.

IRELAND.

TWENTY-TWO TOWN DISTRICTS.

THE average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending March 25, 1905, in the Dublin Registration Area and the twenty-one principal provincial Urban Districts of Ireland was 22.2 per 1,000 of their aggregate population, which for the purposes of these returns is estimated at 1,093,959. The deaths registered in each of the four weeks ended Saturday, March 25, and during the whole of that period in the several districts, alphabetically arranged, correspond to the following annual rates per 1,000:—

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	Mar. 4	Mar. 11	Mar. 18	Mar. 25			Mar. 4	Mar. 11	Mar. 18	Mar. 25	
22 Town Districts	27.0	24.9	22.5	22 2	24.2	Lisburn -	27.3	59.1	22.7	13.6	30.7
Armagh -	41.2	34.4	—	6.9	20.6	Londonderry	19.8	21.1	22.3	37.2	25.1
Ballymena	23.9	4.8	43.1	33.5	26.3	Lurgan -	17.7	26.6	17.7	22.1	21.0
Belfast -	23.1	25.4	22.2	23.1	23.5	Newry -	29.4	12.6	21.0	12.6	18.9
Clonmel -	25.6	61.5	20.5	20.5	32.0	Newtownards	22.9	11.4	11.4	5.7	12.9
Cork -	39.0	34.2	21.2	24.0	29.6	Portadown	20.7	15.6	36.2	5.2	19.4
Drogheda -	28.6	20.4	16.3	40.9	26.5	Queenstown	26.4	52.7	13.2	19.8	28.0
Dublin - (Reg. Area)	30.7	25.2	23.8	22.4	25.5	Sligo -	4.8	19.2	24.0	14.4	15.6
Dundalk -	12.0	23.9	16.0	16.0	17.0	Tralee -	31.7	—	21.1	15.9	17.2
Galway -	19.4	3.9	42.7	7.8	18.5	Waterford	13.6	11.7	23.4	7.8	14.1
Kilkenny -	44.2	—	9.8	24.6	19.7	Wexford -	23.3	46.7	23.3	4.7	24.5
Limerick -	31.4	16.4	17.8	26.0	22.9						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases, registered in the 22 districts during the week ended Saturday, March 25, 1905, were equal to an annual rate of 1.2 per 1,000, the rates varying from 0.0 in fifteen of the districts to 5.3 in Tralee. Among the 159 deaths from all causes registered in Belfast are 4 from measles, one from scarlet fever, one from whooping-cough, 4 from enteric fever, and 3 from diarrhœal diseases.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The populution of this area is 378,994, that of the City being 293,385, Rathmines 33,203, Pembroke 26,025, Blackrock 8,759, and Kingstown 17,622.

In the Dublin Registration Area the births registered during the week ended March 25, amounted to 206—95 boys and 111 girls; and the deaths to 169—77 males and 92 females.

DEATHS.

The deaths registered represent an annual rate of mortality of 23.3 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the area, the rate was 22.4 per 1,000. During the four weeks ending with Saturday, March 25, the death-rate averaged 25.6, and was 5.2 below the mean rate for the corresponding portions of the ten years 1895–1904.

Four deaths from measles, one death from whooping-cough, enteric fever, and *diarrhœa* respectively, and 4 deaths from influenza were registered. In the 3 preceding weeks the deaths registered from measles had been 3, one, and 4, respectively.

There was one death from lobar pneumonia. Broncho-pneumonia caused 5 deaths, and *pneumonia* (not defined) caused 4 deaths.

Of a total of 42 deaths caused by tuberculous disease 12 were attributed to tubercular phthisis, 25 to *phthisis*, one death to tubercular meningitis, one to tubercular peritonitis, one to *scrofula*, and 2 to other tuberculous diseases.

Three deaths were assigned to carcinoma, one to sarcoma, and 4 to *cancer* (undefined).

The deaths of 4 infants prematurely born were registered.

Of 17 deaths which were registered from diseases of the brain and nervous system, 7 were of children under 5 years of age from *convulsions*.

There were 20 deaths from diseases of the heart and blood-vessels.

Bronchitis accounted for the deaths of 17 persons.

One death was due to accidental burns, of a child 2 years of age. One death resulted from drowning, and one death by suicide occurred

In 9 instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases include the deaths of 4 children under one year old and the deaths of 3 persons aged 60 years and upwards.

Forty of the persons whose deaths were registered during the week were under 5 years of age (25 being infants under one year, of whom 10 were under one month old), and 50 were aged 60 years and upwards, including 22 persons aged 70 and upwards, of whom 8 were octogenarians, and one (a woman) was stated to have been aged 92 years.

The Registrar-General points out that the names of the cause of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

The usual returns of the number of cases of infectious diseases notified under the "Infectious Diseases (Nötification) Act, 1899," as set forth in the following table, have been furnished by Sir Charles A. Cameron, C.B., M.D., Medical Superintendent Officer of Health for the City of Dublin; Mr. Fawcett, Executive Sanitary Officer for Rathmines and Rathgar Urban District; Mr. Manly, Executive Sanitary Officer for Pembroke Urban District; Mr. Heron, Executive Sanitary Officer for Blackrock Urban District; Dr. Byrne Power, Medical Superintendent Officer of Health for Kingstown Urban District; and Dr. Whitaker, Medical Superintendent Officer of Health for the City of Belfast.

Table showing the Number of Cases of Infectious Diseases notified in the Dublin Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfast, during the week ended March 25, 1905, and during each of the preceding three weeks. An asterisk (*) denotes that the disease in question is not notifiable in the District.

Cities and Urban Districts	Week ending	Small-pox	Measles	Rubella, or Epidemic Rose Rash	Scarlet Fever	Typhus	Relapsing Fever	Diphtheria	Membranous Croup	Continued Fever	Typhoid or Enteric Fever	Erysipelas	Puerperal Fever	Varicella	Whooping-cough	Cerebro-spinal Meningitis	Total
City of Dublin	Mar. 4	–	*	*	6	–	–	3	–	12	5	18	–	*	*	*	44
	Mar. 11	–	*	*	7	1	–	2	–	5	11	4	–	*	*	*	30
	Mar. 18	–	*	*	7	1	–	–	–	1	5	12	1	*	*	*	27
	Mar. 25	–	*	*	5	–	–	4	–	5	6	14	–	*	*	*	34
Rathmines and Rathgar Urban District	Mar. 4	–	*	*	2	–	–	–	–	–	1	1	–	*	*	*	4
	Mar. 11	–	*	*	–	–	–	4	–	–	2	–	–	*	*	*	6
	Mar. 18	–	*	*	2	–	–	–	–	–	–	1	–	*	*	*	3
	Mar. 25	–	*	*	1	–	–	1	–	–	–	2	–	*	*	*	4
Pembroke Urban District	Mar. 4	–	6	–	1	–	–	–	–	–	–	–	–	*	–	–	7
	Mar. 11	–	2	–	–	–	–	–	–	–	1	–	–	*	–	–	3
	Mar. 18	–	7	–	–	–	–	–	–	–	–	–	–	*	–	–	7
	Mar. 25	–	33	–	1	–	–	–	–	–	–	–	–	*	–	–	34
Blackrock Urban District	Mar. 4	–	*	*	–	–	–	–	–	–	–	–	–	*	*	*	–
	Mar. 11	–	*	*	–	–	–	–	–	–	–	–	–	*	*	*	–
	Mar. 18	–	*	*	–	–	–	–	–	–	–	–	–	*	*	*	–
	Mar. 25	–	*	*	–	–	–	–	–	–	–	–	–	*	*	*	–
Kingstown Urban District	Mar. 4	–	*	*	1	–	–	–	–	–	–	–	–	*	*	*	1
	Mar. 11	–	*	*	–	–	–	–	–	–	–	2	–	*	*	*	2
	Mar. 18	–	*	*	1	–	–	–	–	–	–	–	–	*	*	*	1
	Mar. 25	–	*	*	1	–	–	–	–	–	–	–	–	*	*	*	1
City of Belfast	Mar. 4	–	*	*	9	–	–	6	1	5	10	3	–	*	*	*	34
	Mar. 11	–	*	*	16	–	–	8	–	6	9	12	–	*	*	*	51
	Mar. 18	–	*	*	7	–	–	3	1	1	7	5	–	*	*	*	24
	Mar. 25	–	*	*	7	–	–	3	1	4	10	5	–	*	*		30

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

Nine cases of measles were admitted to hospital during the week ended Saturday, March 25, 1905, 7 were discharged, and 52 patients remained under treatment at its close.

Ten cases of scarlet fever were admitted to hospital, 10 were discharged, and 47 cases remained under treatment at the close of the week. This number does not include 21 convalescents from scarlatina who remained under treatment at Beneavin, the Convalescent Home of Cork Street Fever Hospital, Dublin.

One case of typhus was discharged from hospital during the week, and one remained under treatment at its close.

Six cases of diphtheria were discharged from hospital, and 9 patients remained under treatment at the close of the week.

Ten cases of enteric fever were admitted to hospital, 6 were discharged, there was one death, and 31 cases remained under treatment in hospital at the close of the week.

In addition to the above-named diseases, 6 cases of pneumonia were admitted to hospital, 14 patients were discharged, and 13 cases remained under treatment at the end of the week.

ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, March 25, in 76 large English towns, including London (in which the rate was 15.3), was equal to an average annual death-rate of 15.9 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 18.3 per 1,000, the rate for Glasgow being 17.2, and for Edinburgh 18.0.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ *N., Long.* 6° 15′ *W., for the Month of March,* 1905.

Mean Height of Barometer	29.616 inches.
Maximal Height of Barometer (2nd, at 9 p.m.)	30.274 ,,
Minimal Height of Barometer (15th, at 5 a.m.)	28.077 ,,
Mean Dry-bulb Temperature	43.6°.
Mean Wet-bulb Temperature	41.1°.
Mean Dew-point Temperature	38.2°.
Mean Elastic Force (Tension) of Aqueous Vapour	.231 inch.
Mean Humidity	82.1 per cent.
Highest Temperature in Shade (on 22nd)	61.4°.
Lowest Temperature in Shade (on 3rd)	29.7°.
Lowest Temperature on Grass (Radiation) (3rd)	25.0°.
Mean Amount of Cloud	47.4 per cent.
Rainfall (on 20 days)	2.731 inches.
Greatest Daily Rainfall (on 14th)	.697 inch.
General Directions of Wind	S.W., W.

Remarks.

March, 1905, was unsettled, squally, and showery, with a preponderance of south-westerly and westerly winds, so that the mean temperature was 1.6° in excess of the average. The precipitation in Dublin was heavy on the 14th and 23rd—about seven-tenths of an inch on each occasion. On the latter date it consisted principally of sleet and snow, the Dublin and Wicklow mountains being deeply covered and looking beautiful on the 24th under a deep blue sky and in brilliant sunshine. Hail fell frequently—as is usual in March—on as many as 9 days. Cloudiness was much in defect, the percentage at 9 a.m. and 9 p.m. combined being only 47.4, and falling at 9 p.m. to 41.9. Naturally from this, sunshine was in excess, as stated below. But the most striking episode in the month was the extreme reduction of atmospheric pressure in a cyclone which was central off the Donegal coast on the morning of Wednesday the 15th. At 8 a.m. of that day the barometer read 27.92 inches at Malin Head, whereas it stood more than 2 inches higher at Haparanda on the Gulf of Bothnia (30.04 inches). In Dublin the mercury had been down to 28.077 inches about 5 a.m.—a reading more than half an inch below the minimum noted in the hurricane of February 26 and 27, 1903, and the lowest recorded in Dublin since December 8, 1886, when, however, the phenomenally low reading of 27.758 inches was registered.

The duration of bright sunshine was estimated at 159 hours, compared with 101 hours in 1904, 110.75 hours in 1903, 94 hours in 1902, 132.5 hours in 1901, and only 84 hours in 1900. The daily average of bright sunshine was 5.1 hours, compared with 3.26 hours in 1904, 3.57 hours in 1903, 3 hours in 1902, 4.27 hours in 1901, and only 2.7 hours in 1900.

In Dublin the arithmetical mean temperature (45.2°) was 1.6° above the average (43.6°). The mean dry-bulb readings at 9 a.m. and 9 p.m. were 43.6° In the forty years ending with 1904, March was coldest in 1867 and 1883 (M.T. = 39.0°), and warmest in 1903 (M.T. = 48.1°). In 1904 the M. T. was 42.9°

The mean height of the barometer was 29.616 inches, or 0.300 inch below the corrected average value for March—namely, 29.916 inches. The mercury rose to 30.274 inches at 9 p.m. of the 2nd and fell to 28.077 inches about 5 a.m. of the 15th. The observed range of atmospheric pressure was, therefore, 2.197 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 43.6°. Using the formula, *Mean Temp.* = *Min.* + (*Max.* + *Min.* × .485), the M. T. becomes 45.0°. The arithmetical mean of the maximal and minimal readings was 45.2°, compared with a thirty years' (1871–1900) average of 43.6°. On the 22nd the thermometer in the screen rose to 61.4°—wind, S.E.; on the 3rd the temperature fell to 29.7°—wind, E.S.E. The minimum on the grass was 25.0°, also on the 3rd.

The rainfall was 2.731 inches, distributed over 20 days. The average rainfall for March in the thirty-five years, 1866–1900, inclusive, was 1.950 inches, and the average number of rainy days was 16.0. The rainfall, therefore, and the rainy days were much above the average. In 1867 the rainfall in March was very large—4.972 inches on 22 days. On the other hand, the smallest March rainfall was .288 inch on 8 days in 1893. In 1900, only .963 inch fell on 13 days. In 1904 the rainfall was 2.091 inches on 19 days.

The atmosphere was foggy in the city on the 2nd, 3rd, 21st and 22nd. High winds were noted on 14 days, reaching the force of a gale on 5 occasions—namely, the 7th, 9th, 11th, 14th, and 15th. Snow or sleet occurred on the 9th and 23rd; hail also fell on the 7th, 9th, 11th, 14th, 15th, 27th, 28th, 29th, and 30th. Temperature reached or exceeded 50° in the screen on 20 days, compared with 10 days in 1904, 18 days in 1903, 23 days in 1902, only 6 days in 1901, only 5 days in 1900, 19 days in 1899, 9 in 1898, 14 in 1897, and 21 in 1896. It fell to 32° in the screen on one night—the 3rd—and on the 22nd it rose to 61.4°. The minima on the grass were 32° or less on 8 nights, compared with 13 nights in 1904, 4 nights in 1903, 5 nights in 1902, 11 nights in 1901, 14 nights in 1900, 13 in 1899, 15 in 1898, 9 in 1897, and 8 in 1896.

The rainfall in Dublin during the three months ending March 31st amounted to 5.378 inches on 46 days, compared with 7.938 inches on 55 days in 1904, 9.126 inches on 61 days in 1903, 5.114 inches on 43 days in 1902, 5.656 inches on 46 days in 1901, 6.698 inches on 63 days in 1900, only 1.650 inches on but 32 days in 1899, and a thirty-five years' (1866–1900 inclusive) average of 6.710 inches on 50.0 days.

At the Normal Climatological Station in Trinity College, Dublin, the mean height of the barometer was 29.615 inches, the highest reading observed being 30.270 inches at 9 a.m. of the 3rd, the lowest, 28.320 inches at 9 a.m. of the 15th. The mean temperature was 45.3°, the mean dry-bulb reading at 9 a.m. and 9 p.m. being 44.5°. Rain fell on 20 days to the amount of 2.816 inches, .816 inch being measured on the 23rd. The number of hours of bright sunshine registered by the Campbell-Stokes sunshine recorder was 146.0, giving a daily average of 4.7 hours. The corresponding figures for March, 1904, were 89.75 hours and 2.9 hours.

Mr. R. Cathcart Dobbs, J.P., reports that at Knockdolian, Greystones, Co. Wicklow, 4.005 inches of rain fell on 21 days. The corresponding figures for March, 1900, were 1.320 inches of rain on 14 days, for 1901, 1.840 inches on 14 days, for 1902, 1.660 inches on 17 days, for 1903, 5.050 inches on 25 days, and for 1904, 2.415 inches on 17 days. The maximal fall on 24 hours was 1.340 inches on the 23rd. The total rainfall since January 1, 1905, equals 5.660 inches on 41 days, compared with 11.756 inches on 58 days in the first quarter of 1900, 7.260 inches on 41 days in the same period of 1901, 6.110 inches on 34 days in 1902, 11.220 inches on 54 days in 1903, and 8.107 inches on 53 days in 1904.

Dr. B. H. Steede, M.D., D.P.H., reports that at the Royal National Hospital for Consumption, Newcastle, Co. Wicklow, the rainfall was 4.212 inches on 23 days, compared with 2.605 inches on 17 days in 1904, 6.186 inches on 30 days in 1903, 1.417 inches on 19 days in 1902, 1.798 inches on 14 days in 1901, and .892 inch on 12 days in 1900. On the 23rd 1.100 inches fell, and on the 14th .810 inch. The total rainfall at this station from January 1 to March 31, inclusive, was 6.387 inches on 44 days, compared with 10.323 inches on 59 days in the first quarter of 1904, 13.602 inches on 65 days in the first quarter of 1903, 6.006 inches on 41 days in the same peroid of 1902, 6.635 inches on 39 days in that of 1901, and 10.631 inches on 57 days in that of 1900. The extremes of temperature were—highest, 57.5° on the 22nd; lowest, 32.2° on the 3rd.

Dr. Arthur S. Goff reports that at Lynton, Dundrum, Co. Dublin, rain fell on 28 days to the amount of 3.31 inches, compared with 2.20 inches on 13 days in March, 1901, 1.98 inches on 18 days in 1902, 4.53 inches on 28 days in 1903, and 2.50 inches on 21 days in 1904. The greatest daily rainfall was .86 inch on the 14th. The temperature in the shade ranged from 59° on the 22nd to 30° on the 3rd. The mean shade temperature was 45.0°, compared with 41.2° in 1901, 46.4° in 1902, 45.7° in 1903, and 44.1° in 1904. Since January 1st, 1905, the rainfall at this station amounts to 6.76 inches on 56 days, compared with 6.71 inches on 40 days in the first quarter of 1901, 7.02 inches on 43 days in 1902, 11.36 inches on 62 days in 1903, and 10.14 inches on 67 days in 1904.

At White Cross, Stillorgan, Miss Muriel O'Sullivan measured 3.188 inches of rain on 23 days, the maximum in 24 hours being .850 inch on the 14th. In the snow storm of the 23rd, .780 inch was collected in the rain gauge. At this station the rainfall in the first quarter of 1905 equals 6.398 inches on 48 days.

Dr. C. Joynt, F.R.C.P.I., returns the rainfall at 21 Leeson Park, Dublin, at 2.810 inches on 20 days, .730 inch being measured on the 14th, and .715 inch on the 23rd.

The rainfall at Cloneevin, Killiney, Co. Dublin, as returned by Mr. Robert O'B. Furlong, C.B., was 3.42 inches on 21 days, as compared with 2.01 inches on 17 days in 1904, 3.40 inches on 29 days in 1903, 1.50 inches on 21 days in 1902, 1.57 inches on 17 days in 1901, .94 inch on 14 days in 1900, and a twenty years' (1885–1904) average of 1.807 inches on 16.4 days. The maximum in the 20 years was 3.59 inches in 1888, the minimum was .26 inch in 1893. The heaviest fall in 24 hours was .98 inch on the 23rd. At this station the total rainfall since January 1 was 6.50 inches on 47 days, compared with a fall of 8.17 inches on 62 days in the first quarter of 1900, 5.96 inches on 45 days in that of 1901, 5.47 inches on 45 days in 1902, 8.30 inches on 64 days in 1903, and 799 inches on 54 days in 1904. Snow or sleet or hail was noticed on the 9th, 15th, and 23rd. Lightning was seen on the 14th.

Mr. T. Bateman returns the rainfall at the Green, Malahide, Co. Dublin, as 3.473 inches on 24 days, and the extremes of temperature in the shade as—highest, 57°; lowest, 27°; the mean temperature being 42.7°.

Mr. W. Miller registered 6.98 inches of rain at Wellesley Terrace, Cork, on 25 days. The greatest fall in 24 hours was 1.17 inches on the 19th. The rainfall was 4.52 inches in excess of the average for March, and had not been equalled in this month during the last 27 years at least.

The Rev. Arthur Wilson, M.A., writing from Dunmanway Rectory, Co. Cork, states that 10.245 inches of rain fell there on 28 days in March, 1.20 inches being measured on the 10th and again on the 19th, and 1.10 inches on the 14th, when a "great storm" occurred. In the seven days from the 10th to the 16th, inclusive, the fall was 4.81 inches, .55 inch falling in 3½ hours on the 12th. In January, 1905, 4.18 inches of rain fell on 20 days, including .96 inch on the 14th; in February, the measurement was 2.75 inches on 15 days, including 1.04 inches on the 25th.

At the Ordnance Survey Office, Phœnix Park, Dublin, rain fell on 24 days to the amount of 2.570 inches, of which .620 inch was measured on the 14th. The duration of bright sunshine was 156.7

hours, the greatest daily measurement being 11.0 hours on the 24th.

Dr. J. Byrne Power, F.R. Met. Soc., Medical Superintendent Officer of Health, Kingstown, reports that the mean temperature at that health resort was 45.8°, being 2° above the average for March during the previous 7 years, the extremes were—highest 56° on the 22nd and 28th; lowest, 29.5° on the 3rd. At Bournemouth the mean was 45.5°, the extremes being—highest, 58° on the 20th; lowest, 30° on the 4th. The average mean temperature at Kingstown during the past five winter months, November, December, January, February and March, was 45.0°, whereas that for the South Coast of England, from Portland Bill to Dungeness, was only 43.6°, that for Bournemouth something lower, 43.5°. Now that the vernal equinox has passed this relative condition of temperature it is becoming reversed as the summer solstice approaches, and from the latter period the summer heat on the South Coast of England becomes great, and at times very oppressive, especially so to invalids, while at Kingstown it will be comparatively mild. From a paper appearing in the number of this Journal for December, 1903, and from subsequent records, it can be stated that this relative condition of temperature has prevailed during the previous 7 years. The mean daily range of temperature at Kingstown was 11.3°, at Bournemouth it was 12.0°. The mean temperature of the sea at Sandycove bathing-place was 42.6°, being 0.6° above the average for the month during the previous 7 years. The relative humidity was 76.5 per cent., being 0.5 per cent. below the average for the month during the previous 4 years. The rain-fall at Kingstown was 2.74 inches on 22 days, of which 0.92 inch was measured on the 23rd; at Bournemouth it was 4.14 inches on 22 days. During the cyclone which occurred on the 15th the Robinson anemometer on the East Pier recorded a maximum velocity of 60 miles, counted 48 miles, between the previous midnight and 1 a.m., as compared with a maximum velocity of 90 miles, counted 66 miles, from 3.30 a.m. to 4.30 a.m. during the cyclone on February 27th, 1903. The total duration of bright sunshine was 159.5 hours, as compared with 156.7 at the Ordnance Survey Office, Phœnix Park, 122 hours at Valentia, 151.6 hours at Parsonstown, 155.4 hours at Southport, 137.2 hours at Bournemouth, and 130 hours at St. Leonards.

PERISCOPE.

LITERARY NOTE.

THE fifth edition of "The Principles and Practice of Medical Jurisprudence" by the late Alfred Swaine Taylor, M.D., F.R.S., has just been published. The new edition has been edited, revised and brought up to date by Fred. J. Smith, M.A., M.D., Lecturer on Medicine at the London Hospital. The editor says in his preface:—"The last ten or twenty years have witnessed such unparalled activity in all branches of the sciences ancillary to medicine in general, the medical jurisprudence in particular, that the editor has found it necessary to rewrite almost entirely some articles and to recast the whole plan of the work in order to bring it into line with the results of this activity. He has spared no pains in making the index to each volume as complete as possible to facilitate the finding of any case or reference." Amongst new features introduced is a chapter on Indian Medical Jurisprudence by Major W. J. Buchanan, I.M.S. The work, which is justly regarded as a standard authority in the English language, is comprised in two volumes of 1900 pages, an increase of 400 pages upon the previous edition. The price is 36s. net. The publishers are Messrs. J. & A. Churchill, of London.

VOYAGES D'ÉTUDES MÉDICALES.

Stations Hydrominerales et Climatiques de France—The seventh "Voyage d'Études Médicales" (V. E. M., 1905) will take place under the scientific direction of Professor Landouzy, of Paris, from the 1st to the 14th of September, next. The "Tour of Medical Studies" will include the mineral watering places and health-resorts of the South-west of France, Luchon, Siradan, Barbazan, Capvern, Bagnères-de-Bigorre, Argèles, Barèges, St. Sauveur, Cauterets, Pau, Eaux-Bonnes, Eaux-Chaudes, St. Christau, Sallies-de-Béarn, Biarritz, Cambo, Hendaye (sanatorium), Dax, Arcachon. A detailed programme of the tour will be published in May. All communications relative to this attractive trip should be addressed to Dr. Carron de la Carrière, Organiser of the V. E. M., 2 Rue Lincoln, Paris.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

"*Tabloid*" *Quinine, Camphor and Aconite.*

MESSRS. Burroughs, Wellcome & Company, Snow Hill Buildings, London, E.C., have introduced a "tabloid" composed as follows:—quinine bisulphate, gr. ¼ (0.016 gm.); camphor, gr. ¼ (0.016 gm.); tincture of aconite, min. 1 (0.059 c.c.). This preparation is a valuable diaphoretic and antipyretic in the prevention or treatment of catarrh and influenza. It is also indicated in inflammatory conditions where aconite reduces the rate and force of the heart, and assists quinine and camphor in promoting diaphoresis and combating fever. The "Tabloid" product is convenient and portable, allowing of easy administration, and disguising the bitter taste of quinine. The dose is one every half hour till diaphoresis is produced and the pulse slowed. This "tabloid" is issued in bottles of 25 and 100.

Gadd's Standardised Galenicals.

WE have received from Messrs. Evans, Gadd & Company, of Bristol and Exeter, samples of half a dozen of their galenicals, prepared in accordance with published formulæ, and standardised by chemical, physical, and physiological methods. The samples are the tinctures of aconite, Indian hemp, digitalis squill and strophanthus, and liquid extract of ergot. The last-named is prepared from ergot which has been tested by physiological experiments, both as to its hæmostatic and as to its ecbolic actions. Its dose is from 10 to 30 minims., the strength being that specified in the *British Pharmacopœia.* The tinctures mentioned are standardised, not by chemical or physical but by physiological methods. They appear to be excellent preparations and reflect great credit on the firm.

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

JUNE 1, 1905.

PART I.

ORIGINAL COMMUNICATIONS.

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ART. XXI.—*Clinical Report of the Rotunda Hospital.*[a] By E. HASTINGS TWEEDY, F.R.C.P.I., Master; and GIBBON FITZGIBBON, M.D., and ARTHUR HOLMES, M.B., Assistant Masters.

THE year 1903–4 has been in many respects an eventful one to the hospital. We have lost through death two of our esteemed colleagues. Those of us who came in personal touch with Sir Philip Smyly in his capacity of Consulting Surgeon to the Hospital can best appreciate the loss we have sustained by his death.

In the untimely death of Dr. Neville, too, we have been deprived of the services of a most brilliant member of our staff.

These vacancies have been filled by the appointment of Mr. Francis Heuston, F.R.C.S.I., Senior Surgeon to the Adelaide Hospital, and of Dr. Robert Rowlette, Lecturer on Pathology, Queen's College, Galway.

I am pleased to be able to record that our Consulting Staff now includes the names of four distinguished past Masters—Drs. Lombe Atthill, Smyly, Purefoy, and Sir Arthur Macan.

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[a] Read before the Section of Obstetrics of the Royal Academy of Medicine in Ireland, on Friday, April 7, 1905.

All these names are closely associated with the recent progress of our hospital, and to Dr. Smyly in particular we owe the great structural changes which have enabled this institution to maintain its position in the forefront of maternity hospitals.

The new pathological laboratory, generously presented to the hospital by the former Master, Dr. R. D. Purefoy, has proved an incalculable advantage to the institution.

The unsatisfactory condition of our laundry work has ceased since we have entered into our new contract—a change which has, however, involved the hospital in an additional expenditure of £100 per annum.

The deadlock which arose between Irish maternity nurses and the Central Midwives Board in respect of their ability to qualify for the English State examination has been amicably arranged. The subject was first brought prominently to notice by the President of our Obstetrical Section of the Royal Academy of Medicine in Ireland. It was taken up with great vigour by the Governors of the Rotunda Hospital, who, in upholding the interests of their own nurses, were splendidly fighting the cause of all other Irish Maternities.

To Mr. John Gordon, K.C., M.P., is due, in chief part, the satisfactory compromise arrived at; were it not for the personal influence he brought to bear upon some prominent members of the Central Midwives Board it is probable that a less satisfactory termination of the controversy might have resulted. Our thanks are also due to the Editor of the *Medical Press and Circular* for his able advocacy of our just cause.

A very remarkable increase in the number of patients treated in both the Intern and Extern Maternity occurred throughout the year. In the former department the increase amounted to 193 deliveries, and in the latter to 240. The admissions to the Intern Maternity reached the figure of 2,197. All these occupied beds, and had to be fed and cared for by our nursing staff; 310 were discharged after longer or shorter periods as not being in labour, whilst 1,887 were delivered in the wards of the hospital.

. The months of May, July, and August show admissions well above 200 per month, and in the first of these 239 women were admitted and 203 delivered. Such numbers were never contemplated by the organisers of our present hospital system, and at times our resources were strained to the utmost. The authorities of the hospital, acting with commendable foresight, have determined on a scheme to enlarge the hospital, so as to still further ensure the safety of our patients and to enhance its usefulness.

The efficiency of a maternity institution is shown more by a low morbidity rate than by an actual mortality. I desire, therefore, at once to direct attention to our results in this respect.

Reckoning our morbidity by the method which has been employed in the hospital for years—viz., the rising of a temperature to or above 100.8 F. throughout the puerperium, we record 159, or a percentage of 8.42 on the total deliveries in the house. These figures compare favourably with the preceding twelve months, in which the morbidity works out at 8.6 per cent. For the sake of comparison with other years we have retained this plan of estimating morbidity, but as a working basis for treatment we have entirely discarded it. It is an arbitrary limit, and differs from the limit of leading Continental Maternities by being two-fifths of a Fahrenheit degree higher, and for it we have substituted the following condition as constituting morbidity—viz., a temperature running above 99° for thirty-six hours, and accompanied by a pulse rate of over 89 per minute. This, though apparently increasing the morbidity of our hospital, has worked altogether to the advantage of our patients.

Two hundred and two morbid cases have thus been recorded; 91 of these were very slight, and required no active treatment; 26 became normal after one vaginal douching; an additional 25 after a single uterine douching, and 28, being slightly more prolonged, were given two, and sometimes three, uterine douches before the temperature fell to normal. Blood clots, retained lochia or fragments of membrane, accounted for the majority of these temperatures, whilst others arose from causes other than puerperal. There remain 32 cases to record of serious and persistent morbidity.

The routine method now in force in dealing with morbid cases consists in a careful examination for the cause as soon as the symptoms present themselves, and if these are acute the thirty-six hour limit is not waited for. If suspicion is directed to the parturient canal a vaginal douche is administered, if not contra-indicated (a culture for microscopical examination having been first taken) a purgative is given, and the head of the bed raised on blocks to promote free drainage; if symptoms persist on the following day the vagina is again douched out, a Fergusson's speculum inserted, and the cervix wiped dry with sterile wool. Then a sterile glass tube, suitably curved, is passed into the uterus, and its contents are aspirated into the tube by means of an affixed syringe. The tube is next rapidly sealed at either end and sent down to the Pathological Department for bacteriological examination and report of its contents. The uterus is now douched with salt and water, peroxide of hydrogen, or cyllin solutions, according to the predilection of that Assistant Master whose duty it may be to perform the operation.

If symptoms have not abated within twenty-four hours the patient is transferred, with her mattress and all her belongings, to an isolation ward, where she is taken charge of by a special nurse, and the uterus is again douched. If the bacteriological report has been productive of positive results the inside of the uterus is explored by means of a gloved forefinger in order that pieces of retained placenta, membranes, or old blood-clot may be removed if any such should be present.

This treatment differs essentially from the methods employed during the earlier months of my Mastership. Much reliance was placed by my predecessor on the use of the flushing curette, and his views found warm supporters in the Assistant Masters who were then associated with me. The evidence they were able to adduce in favour of the curette, combined with tight packing of the uterus with iodoform gauze, appeared to be sufficient to permit a continuance of the practice until I could myself personally judge as to its efficiency. My experience of the results obtained by this treatment compelled its abandonment.

The majority of cases no doubt get well under its employment; these are for the most part sapræmic, and would yield readily to any form of treatment. When pathogenic organisms are present it rarely, if ever, succeeds in their removal; on the other hand, a grave liability arises that further inoculations and other serious consequences may follow from its employment. Moreover, I have demonstrated by *post-mortem* examination in two cases that the curette fails at times to fulfil its primary object—namely, the removal of adherent pieces of placenta or even of membrane.

On one occasion I employed the flushing curette in an endeavour to remove a piece of sloughing placenta, the exact locality of which I had ascertained by an examining finger; it caused free hæmorrhage, failed even under these circumstances to loosen the mass, and I now look upon its employment in such cases as unjustifiable.

Constitutional treatment was not neglected in any of our serious cases of morbidity; tincture of perchloride of iron in 40 minim doses was administered to all three times a day, and mercurial inunctions, or calomel in small continuous doses by the mouth, were employed in many cases, some of which ended fatally. Stimulants were administered to all, as well as nourishment in large quantities. In one fatal case anti-streptococcus serum was administered immediately on the germ being discovered in the uterus; the results were so discouraging that I feel no inclination to repeat the treatment should occasion arise within the near future.

In one very severe case of pyæmia improvement rapidly followed on the free inunction of Credé's ointment—collargol, 17 grs. to the oz. of lard.

The treatment of these grave cases, unfortunately, did not prove uniformly successful, for out of our thirty-two serious cases where morbidity was due to septic infection eight died—three of pyæmia and five of acute septicæmia. One contracted the disease in the month of March, three in April, two in May, one in June, whilst the last case, which occurred in October, was undoubtedly septic on admission to hospital.

A reference to Tables X. and I. will show that these months represent our highest percentage of morbidity and the greatest number of admissions.

Our nurses are limited by the accommodation provided for them, having been calculated on a basis of one nurse to three patients at a time when the average number of deliveries did not exceed a hundred per month. It became necessary, therefore, to add to their individual work in consequence of the increased demand on the resources of the institution. Further difficulties arose in the form of an epidemic of influenza, which placed several of our nurses on the sick-list, whilst others developed sore fingers, the result of coming in contact with septic cases.

It is yearly becoming more difficult to empty wards in rotation for the purposes of airing and thorough disinfection—a plan that has worked with such admirable results in the past. Furthermore, our isolation wards are unsuitable and altogether insufficient for the hospital requirements. Persistent and very strenuous efforts were made from the first to deal with this induced unhealthiness of our hospital, and great credit is due to our Lady Superintendent, Miss Ramsden, for the untiring energy she displayed in carrying out new and very irksome alterations in our hospital system.

These changes include the providing of rubber gloves and finger-stalls for nurses, students, and officers of the house; the substitution of a sand-glass for the rough and ready method before employed for estimating the time spent in washing and disinfecting the hands; the introduction of a large porcelain tank in each labour ward, containing a 1 in 6,000 biniodide of mercury solution, so that all the trays and other vessels belonging to the labour ward may be continuously left soaking in it when not in use. The complete isolation of each bed, which in common with all that appertains to it, is now numbered with a number corresponding to one painted on the wall over its head.

The introduction of sterilised Gamgee diapers; the providing of a daily change of towels for drying the buttocks; the introduction of a specially designed bed basin, used exclusively by the patient in the bed to which it belongs; the disinfection by boiling of this basin, together with the face-basin and the chamber, as soon as the patient has been discharged and before the bed is again occupied.

The tow-wipes are no longer disinfected by sublimate solution, but are now boiled daily and kept steeping in solution of lysol.

To mitigate the liability to sore fingers, nurses wash all morbid cases by the aid of a forceps. These, and many other changes which have now become the routine of our hospital practice, had to be evolved one by one, and needless to say did not tend to lessen the work of the nurses.

I feel confident that each of these innovations bore some part in restoring the hospital to its more than normal condition of healthiness, but a noticeable improvement cannot be said to have resulted until the bedchambers and bed-basins were boiled. It seems to me perfectly evident that the process relied on for disinfecting basins by scrubbing with soap and water and rinsing with corrosive antiseptic is altogether inadequate.

MATERNAL MORTALITY.

Thirteen women died in the Maternity Hospital throughout the year. This is an increase of four on the previous year, and even taking into consideration the increased number of women confined in the hospital, the percentage per 1,000 is higher.

In the month of December our first death occurred through accidental hæmorrhage, and the case is so remarkable that I shall report it in full:—

K. M., 6-para, aged twenty-nine, admitted December 30th, 1903; normal pulse and temperature, in an early stage of labour, without complication. Two and a half hours after admission sudden and very severe external hæmorrhage appeared, the Assistant Master being at the time in the ward. The patient was immediately prepared for examination; the os admitted one finger, and the vertex presented; no placenta to be felt. The vagina was tightly plugged and the binder applied in the usual manner, great collapse supervening before this operation could be completed. The usual well-known methods for combatting collapse were resorted to, but despite these the patient's condition became distinctly worse, and her pulse could be felt with difficulty at the wrist an hour and a half later. This seemed clearly to indicate that hæmorrhage, though not appearing through the plugs, was nevertheless being poured into the uterus; the plugs were therefore removed, but to our surprise we found that this was not so, the amount of free blood not being greater than could be accounted for by that which was poured out during the process of plugging.

The membranes ruptured whilst the plug was being removed, and it seemed to me advisable, under the circumstances, to perform combined bi-polar version. This was performed with the utmost ease, and occupied but a few moments. Several pints of saline infusion were injected into the cellular tissue; this, combined with stimulants and raising the foot of the couch, caused the patient to rally for a time. During the succeeding four hours no hæmorrhage occurred, and she seemed to make satisfactory progress towards recovery; then a sudden change for the worse took place, and she failed to respond to our utmost efforts at stimulation. Delivery of a dead child was completed whilst the patient was moribund.

No light was thrown on this case by the autopsy. The uterus contained no blood.

Case II. is also of great interest.

A. T., 5-para, aged twenty-eight, admitted January 21st in labour; pulse 108, temperature 99.2°. The head was freely ballotting above the brim, and the history of her last delivery, which occurred in the hospital, was that of a difficult forceps through an insufficiently dilated os.

Three hours after admission the head was still freely ballotting, and a vaginal examination demonstrated the os to be a little more than half dilated; during this examination the membranes ruptured with great force. Some hours later, the pains having decidedly weakened in character, my late Senior Assistant thought it advisable to attempt the application of forceps. Failing to deliver by these means, and having diagnosticated a low insertion of the placenta, he turned and brought down a leg, and retired to bed, believing that the patient would deliver herself.

On the following morning the patient wore an anxious appearance, and labour pains had entirely ceased. I proceeded, therefore, to deliver her—a dead child being born. On examination the vault of the vagina was found to be extensively torn, the tear involving the lower uterine segment in a lateral and transverse direction I removed the uterus by abdominal hysterectomy an hour and a half later. The patient never properly rallied, and died on the fourth day.

INDUCTION OF PREMATURE LABOUR.

This operation was performed in all five times throughout the year.

Case I.—A. M., 7-para, aged forty-one, was seen in the dispensary six weeks before admission to hospital, and then complained of loss of power in the lower extremities, with pain in the back of three weeks' duration. This loss of power had become absolute on admission. She suffered from incontinence of urine, loss of rectal control, and a bed-sore formation on the buttocks. The knee-jerk was present in the right, absent in the left leg; ankle clonus and the plantar reflexes were absent; Babinsky's sign was well marked. Tactile sensation was present, but the sense of pain was lost over the lower extremities and over the abdomen. She suffered from cystitis with pus in the urine.

Two bougies were introduced into the uterus three days after admission. On the following morning the cervix was dilated up to seven centimetres by a Bossi's dilator; fresh bougies were then placed in the uterus, accompanied by iodoform gauze plugging of the cervix. On removal of these, in twelve hours, the vagina was tightly plugged with cotton wool. In another twelve hours labour had started, and was completed naturally, a living child being born. It breathed feebly, and died soon afterwards.

The patient regained slight power in her legs on the following day, and movements were fully established by the third day; sensation returned on the seventh day, and rectal and bladder symptoms had disappeared in a fortnight. On the nineteenth day she left hospital completely cured. A diagnosis of acute neuritis was made.

Case II. is remarkable for the complete and prolonged absence of labour pains after rupture of the membranes:—

Case II.—E. H., 3-para, aged thirty-one, was admitted on the 18th of July at full term, with the membranes ruptured. She was kept under observation for five days, and then, as no uterine action had taken place, three bougies were passed into the uterus. These were removed in twenty-four hours; the cervix was then dilated with Bossi's dilator to 5 centimetres and plugged with iodoform gauze. In another twenty-four hours feeble labour set in, the woman being finally delivered by means of forceps of a dead child with a well marked spina bifida.

Case III.—M. M., 7-para, aged thirty-two, was sent up from the country nine days before full term to have labour induced for a slightly flattened pelvis; conjugata vera 9.5 centimetres; all other measurements normal. Premature labour had previously been induced successfully in the Rotunda Hospital on several occasions.

Having regard to her closeness to full term and the comparatively slight degree of contraction, I determined to let her await normal labour. This had not occurred four weeks after admission, and her great size, together with the accurate dates she was able to furnish, made it highly probable that we had to deal with a case of prolonged gestation.

Similar means to those detailed above were adopted to induce labour, but they failed to excite pains at the end of forty-eight hours. An ounce of sterilised glycerine was then injected into the uterus, and was followed by the rapid onset of labour pains. At the expiration of thirteen hours the os was fully dilated and the head fixed in the brim to an extent that induced my Assistant to believe that delivery with forceps could easily be accomplished. This proved an impossible task, the blades slipping from the head on two different occasions.

The absence of fœtal heart sounds contra-indicated the performance of symphysiotomy or further delay in the hope of obtaining better moulding of the head. Internal podalic version was accordingly performed, and a dead child, weighing 10¾ ℔s., was extracted with difficulty.

Delivery by craniotomy had been accomplished in her four first children; her fifth child lived for a few moments, and was delivered by forceps; in the sixth and seventh, labour was induced just before full term—living, large, and fully developed infants being born.

Case IV.—M. O., 16-para, aged forty, had labour induced because of extensive and severe kidney trouble of six weeks' duration. Her symptoms included severe œdema, albuminuria followed by hæmaturia. Dr. F. C. Crawley kindly examined her eyes for me, and diagnosticated albuminuric retinitis and optic neuritis. All her symptoms having increased in severity during the three days in which she was under observation in the hospital, labour was easily induced by the passage of three bougies into the uterus. Delivery followed in three hours, and she was discharged on the twelfth day from hospital free from œdema and with a normal temperature, but with persistent albuminuria.

Case V.—*See* Hydramnios.

ACCIDENTAL HÆMORRHAGE.

Amongst the thirteen cases of accidental hæmorrhage one ended fatally, and is fully recorded under the heading of Mortality.

Nine of these cases required no treatment, as the patients were in good labour and the hæmorrhage not severe enough to warrant interference; in the others labour had not commenced. In these, moist aseptic pellets of cotton wool were inserted into the vagina, and packed tightly round the cervix after a preliminary disinfection. The plugging in each instance was then continued until the vagina became completely filled. A diaper placed between the legs and a tight abdominal binder applied from above downwards completed the operation.

It is unnecessary and mischievous to place a bullet-forceps on the cervix when performing this operation, for the plugs can be readily applied by the aid of the left hand passed into the vagina, with its palmar surface pressed against the posterior wall, so as to make a wide and simple retractor or speculum. During the performance of this the patient is preferably placed on the left side.

I feel more convinced than ever that the circulation in the uterine arteries can be directly impeded by pressure exerted on them by the vaginal tampon. The fact that even in fatal cases the uterus has not been found to contain more blood than can be accounted for by the amount poured out during the application of the plug sufficiently answers the theory that intra-uterine tension due to the out-pouring of blood into the uterine cavity suffices to prevent further flow.

PLACENTA PRÆVIA.

There were only four cases of placenta prævia, with one death, due to septic infection. This woman was plugged by a practitioner before being sent into hospital; she fainted several times whilst coming a distance of nine miles in a cab, and reached us in a deplorable condition. Bi-polar podalic version was easily performed, and she gave birth to a dead child two hours later by natural efforts.

On the fourth day her temperature rose to 101° F. The following day to 102° F.—on this evening cultures taken from the vagina and uterus contained streptococci. She died of acute sepsis on the eleventh day.

Bi-polar version was performed in all other cases, and in one a living child was born sixteen hours after performance of this operation, a proof that the life of the child is not necessarily sacrificed by its prolonged stay in the parturient canal after a foot has been brought down with the membranes ruptured.

POST-PARTUM HÆMORRHAGE.

In none of the twenty-nine cases recorded under the above heading was there any effort made to weigh the quantity of blood lost, and so estimate the severity of the disease. A method such as this, even were it practicable, would fail in its object because of the impossibility of ascertaining beforehand the amount of loss that can with safety be sustained in a given case.

Our diagnosis rested on the presence of a continuous flow which natural processes were insufficient to check, and which, if permitted to continue, would inevitably result in the supervention of constitutional disturbance. This seems to me the only practical means at our disposal for determining the condition.

We divide these hæmorrhages into three distinct classes—

(1) Traumatic, the result of tearing of the soft parts.
(2) Pseudo-atonic, due to inefficient uterine retraction, the result of mechanical obstruction or misplacements.
(3) Atonic, a condition of great rarity.

All our cases were successfully treated as follows :—Extern manual massage and ergot in eight cases ; in a further three a hot vaginal douche, with bi-manual massage to the uterus. In eighteen cases the uterus was unable to retract because of mechanical causes ; adherent placenta was present in twelve, and blood clots, associated with retained membranes, in six. All save one of these were promptly arrested on the manual clearing out of the uterus, followed by a hot uterine douche ; the remaining case necessitated the plugging of the uterus with sterilised gauze bandages three inches wide and six yards long.

There remain to be mentioned two cases of secondary *post-partum* hæmorrhage—one, M. W., occurred on the eighth day in conjunction with septic infection (*see* Case 9, Mortality Table); the other case had a normal delivery, with a torn perineum, which was united by one suture. Six hours later the patient was discovered to be bleeding, the cause of which was found, on close inspection, to be due to a spouting vessel in the perineum.

MANUAL REMOVAL OF THE PLACENTA.

Manual removal of the placenta was performed thirty-six times. Thirteen of these cases showed a more or less morbid temperature within two days. Three more developed morbidity, but not of a severe kind, after the fifth day. In six *post-partum* hæmorrhage was the indication, while in thirty-one adherent placenta was present, and in five retention was due to spasm of the uterus.

In my opinion this latter complication should not be met with so frequently as we have seen it, nor should it call for forcible removal of the placenta save in the presence of dangerous hæmorrhage. Rest, combined with hypodermics of morphin, will in time bring about relaxation of spasm, and so enable the uterus to empty itself by natural efforts.

The employment of gloves, together with the repeated introduction of the gloved hand into the uterus, until every particle of adherent tissue has been removed, will, I feel sure, greatly lessen our morbidity in the future.

ECLAMPSIA.

We had no fatality amongst our eight patients who developed eclamptic fits. Five of these were primiparæ, two 2-paræ, and one 3-paræ. All were œdematous and suffered from marked albuminuria.

The fewest number of fits was two and the greatest eleven. In two the convulsions were altogether *post-partum* in type, and in two they were of the mixed variety, occurring both before and after delivery.

Macerated children were born in four of the cases. In one instance forceps was applied, whilst labour was terminated by natural efforts in all the other cases.

In treating this diseased condition the Dublin method was strictly followed. This consists of a rigid adherence to many points of detail. The patient is kept on her side to prevent fluids formed in the mouth from reaching the lungs by inspiration. For the same reason croton oil or other form of medicine or fluid is not permitted to be placed in the mouth of an unconscious patient. I feel convinced that the so-called œdema of the lungs, which is said to close the existence of many eclamptics, results in reality from such mistaken methods of treatment.

Neither a vapour bath, nor pilocarpin, nor other form of diaphoretic is administered, for the advantage derived from each and all seem very problematical, and are certainly more than counterbalanced by other objectionable effects.

We pass a stomach-tube through the mouth in the event of our patient being deeply unconscious, and through the nose if she be in a state of semi-consciousness. In the former condition the soft palate fails to respond to the stimulation of the nose-tube, and the latter is in consequence much more likely to be passed into the trachea than through the œsophagus. By means of this tube the stomach is thoroughly washed out. Into the stomach is then poured, by means of the tube, a quart of slightly saline hot water, together with castor oil, elaterin, croton oil in four or five drop doses, or some saline purgative, according to the predilection of the operator.

Whilst these preparations are being perfected a hypodermic of morphin in a half-grain dose is injected; this drug is repeated every two hours in quarter grain doses until the fits cease or until a grain has been administered. It is occasionally necessary to continue the administration of the drug, but on no account should a greater dosage than two grains be administered in twenty-four hours.

We attach enormous importance to the thorough and rapid evacuation of the bowels, and the purgatives are stimulated in their action by the administration of copious enemata of soap and water with castor oil. Saline enemata are also given.

In severe cases normal saline, to the amount of two or three pints, is infused once, or oftener, into the cellular tissue beneath the mammary glands. Labour is never induced, nor is its onset to be desired. Should it unfortunately occur its progress is seldom interfered with. In the one case in which we departed from this rule the convulsions seemed to be rather aggravated than diminished by the complete delivery.

PROLAPSE OF THE FUNIS.

This complication arose in seven cases. In only two of these was the cord pulsating when the condition was discovered; both children were born alive—one by forceps and the other by expression on the fundus.

Of the remaining five cases, two occurred with anencephalic monsters, and both were accompanied by *ante-partum* hæmorrhage—one of the accidental and the other of the unavoidable variety. The other cases are of no interest.

HYDRAMNIOS.

Of the seven cases of this condition one occurred in a dropsical woman, with albuminuria and symptoms of threatened eclampsia. An adherent placenta was associated with another. Accidental hæmorrhage complicated a third. In a fourth the condition existed in an aggravated form and necessitated the rupture of the membranes at the seventh month of pregnancy. The measurement of the fluid amounted to 22 pints.

Delivery of a dead and hydrocephalic monster was accomplished by podalic version.

HYPEREMESIS GRAVIDARUM.

There was one severe case of this malady, it occurred in a 10-para, aged thirty-seven, sent to us from the country, suffering from complete inability to retain food of any kind in the stomach. She was fed for three days per rectum, and numerous saline enemata were also administered.

Retching and vomiting were entirely relieved by these means, and the patient was given and retained peptonised whey on the fourth day; on the eighth day regular feeding was adopted, with a dietary that included fish. Labour set in four days later in the eighth month of pregnancy. The fœtus was macerated. Her convalescence was uninterrupted, and she left the hospital on the eighth day after her confinement.

MANIA.

Mania of a mild type developed in two cases, both primiparæ; they required careful watching and isolation. Each left the hospital on the twelfth day completely cured of hallucinations and in sound health.

SYMPHYSIOTOMY.

This operation was necessitated in the case of:—

M.A., a primi-para, who was admitted into hospital at the commencement of labour with the head freely ballotting above the brim. Her pelvic measurements were normal save for that of the internal conjugate, which measured 8 centimetres. The pains were very feeble, but little apprehension was felt that she would not deliver herself naturally. At the end of twenty-four hours pains were still weak, and the head had not fixed in the brim. Morphin was given to promote sleep. At the expiration of twelve hours more the os was fully dilated. Temperature and pulse were normal, and the head still showed no signs of moulding. Walcher's position was tried, and the membranes having ruptured the patient was left for another six hours, and then forceps were applied in a tentative manner without success, the indication for their use being rapidly recurring pains associated with a quickened pulse. The fœtal heart was distinctly audible after efforts at delivery by forceps were discontinued, and nothing remained open to us under the circumstances save symphysiotomy.

This turned out to be a simple operation unaccompanied by hæmorrhage or any laceration to the soft parts. The life of the child was not saved. The woman made almost an uninterrupted recovery, marred for a few days by an acute cystitis, the result of the accidental nipping of the bladder between the pubic bone for a few hours during one of the dressings. She was allowed to walk in six and a half weeks, and left the hospital eight weeks after operation.

CÆSAREAN SECTION.

M. H., aged twenty-nine, 1-para, sent into hospital because of her small size and abnormal shape before labour had set in. Her pelvic measurements were Cv., 8 cm.; t, 13 cm. Labour set in on the third day after admission. The head showed no sign of fixing twelve hours after commencement of labour, and was found to markedly over-ride the symphysis pubis. It was perfectly apparent that a sufficient amount of moulding could not be brought about by natural efforts to permit the head to pass through the brim, and Cæsarean section was performed. Both child and mother left the hospital in complete health on the fifth week from delivery.

The operation of Cæsarean section must be considered amongst the easiest and safest of abdominal sections when performed under the favourable condition which obtained in this case.

A very interesting point which was noticed in this, as well as in all my other similar operations, was that the uterine wall thickened rapidly during the process of suturing, and that this thickening occurred quite independently of uterine contractions—a proof that the processes of retraction and contraction are not dependent one upon the other, and that a uterus, though in a relaxed condition, can retract, and so prevent *post-partum* hæmorrhage.

CRANIOTOMY.

Craniotomy was necessitated in the case of a dead child with prolapsed non-pulsating cord; the head was freely ballotting above the brim, though the woman was having strong labour pains for several hours. The extraction was accomplished without difficulty by cranioclast.

ABORTIONS AND IMMATURE DELIVERIES.

Sixty-one cases are recorded under the above heading. In thirty-one of these the uterus was emptied of its contents by natural methods. In six, bi-manual expression sufficed to remove the ovum, while in twelve, fingers inserted into the uterus caused complete separation of retained contents, and these were subsequently expressed bi-manually or removed by ovum forceps. In eight cases the cervix was too narrow to permit of the entrance of a finger, and a flushing curette was employed successfully to empty the cavity. In one the replacing a retroflexed uterus and the flushing out of its cavity caused the ovum to escape. In the remaining two the cervices were dilated by Bossi's dilator to extract immature fœtuses.

HYDATIDIFORM MOLES.

Three of these cases occurred during the year, and the first is of particular interest, as the woman subsequently developed chorio-epithelioma :—

M. W. believed herself to be ten weeks pregnant, and had suffered from hæmorrhagic discharge for four weeks before coming under observation; this had developed into severe bleeding two days before admission into hospital, July 10th. A correct diagnosis of her condition was made from the discovery of a cyst in the discharge, and the uterus was immediately emptied of its contents. Her convalescence was normal, and she left the hospital on the eighth day. On October the 18th, she returned complaining of a sanious discharge, which she stated had continued almost since she had left the hospital. On examination the uterus was found to be retroflexed and enlarged with a patulous os. On the following day the uterus was curetted, and a small cystic mass, together with large quantities of old blood-clot, were removed. Rather severe hæmorrhage followed this operation, and necessitated plugging with iodoform gauze. Hæmorrhage then ceased for twelve days, only to again return, and on this occasion another small cyst was removed. The specimen taken from the first curettage was undiagnosable by frozen section but its more complete preparation demonstrated a marked degree of malignancy. On the 8th November the uterus was extirpated by the vaginal route; its cavity was perfectly healthy save at the fundal extremity, where a small malignant excavation, about ⅜ inch wide and a ½ inch deep, was found. This had almost perforated the uterine wall, its only covering being peritoneum.

Of the other two cases one was delivered naturally, and the other calls for no comment.

HÆMATOMA OF THE VULVA.

Of the three cases in which this complication was met with only one necessitated the opening of the large tumour and the complete turning out of blood clots. The cavity was closed, and hæmorrhagic oozing controlled by obliterating it by cat-gut ligatures in several layers; a certain amount of suppuration ensued, accompanied by a morbid temperature, which did not at any time exceed 100° F.

PODALIC VERSION.

The ten cases of podalic version met with called for no particular comment.

INFANTILE CONDITIONS.

Amongst the infantile conditions four cases of imperforate anus were met with; in all these the obstruction was relieved by operating through the perineal route. One infant died of secondary hæmorrhage, two more sank a few hours after the operation, and one survived, leaving the hospital in perfect health.

In conclusion I desire to convey my sincere thanks to all the officers of the Institution, and particularly to my Assistant Masters, whose loyal support I have at all times been able to count upon.

Table No. I.—*Admissions to Maternity Department.*

——	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Total
Total deliveries -	124	141	148	122	149	149	197	161	176	168	143	150	1,828
Total abortions -	5	3	6	8	3	10	6	1	4	5	4	4	59
Not in labour -	21	31	20	28	24	28	36	17	36	29	21	19	310
Total	150	175	174	158	176	187	239	179	216	202	168	173	2,197

Table No. II.—*Dispensary for Out-Patients.*

Number of first attendances - - -	5,229
,, repeated ,, - - -	6,885
Special Dispensaries - - - - -	1,700
Total - - -	13,814

TABLE No. III.—*Showing Nature and Number of Cases Treated in the Extern Maternity*, 1903–1904.

Total deliveries	2,285	Mortality, maternal	6
Abortions	268	Hæmorrhage—	
Hydramnios	5	Accidental	7
Presentations—		Unavoidable	7
Face	4	*Post-partum*	10
Face to Pubes	14		
Brow	1	Operations—	
Breech and Footling	59	Version	14
Transverse and Oblique	9	Forceps	39
Compound	2	Decapitation	1
Twins	21	Manual removal of Placenta	24
Prolapse of Funis	6		
Infantile conditions—			
Meningocele	1	Eclampsia	2

TABLE No. IV.—*Showing Nature and Number of Cases Treated in Intern Maternity.*

Total admissions	2,197	Eclampsia	8
„ deliveries	1,887	Mania	2
Primiparæ	664	Emphysema (cutaneous)	1
Abortions	61	Puerperal ulcer	7
Hydrorrhœa	1	Morbidity	202
Hyperemesis	1	Mastitis	3
Hydramnios	7	Mortality, maternal	13
Myxoma Chorii	2	„ infantile	
Presentations—		Died in Hospital	40
Face	2	Premature	20
Face to Pubes	19	Recent	33
Brow	2	Macerated	48
Breech and Footling	56	Putrid	1
Transverse and Oblique	5	Infantile conditions—	
Compound	2	Anencephalus	3
Twins	16	Hydrocephalus	5
Prolapse of Funis	6	Spina bifida	6
Hæmorrhage—		Meningocele	2
Accidental	18	Cephalæmatoma	1
Unavoidable	4	Cleft palate	2
Post-partum	29	Ophthalmia	2
Secondary	2	Talipes	4
Hæmatoma vulvæ	2	Deformed hands	3
Lacerated Perinæum	392	Hydrocele and hypospadias	1
Complete „	4		
Myoma	3	Ectropion vesicæ	1
Deformed pelves	4	Imperforate anus	4
Operations—		Mastitis	1
Induction of labour	5	Convulsions	2
Version	9	Icterus	9
Forceps	65	Monsters	1
Perforation	1		
Cæsarean section	1		
Symphysiotomy	1		
Manual removal of placenta	36		

Table V.—*Maternal Mortality.*

Name	Admitted	Delivered	Died	Cause of death	Notes
K. M.	Dec. 30	Dec. 30	Dec. 30	Accidental Hæmorrhage	Plugging and Version
A. I.	Jan. 21	Jan. 22	Jan. 27	Rupture of the Vagina	Version, Hysterectomy
M. E.	Feb. 17	Feb. 18	March 8	Phthisis	
L. M.	March 6	March 7	April 1	Septicæmia	
M. D.	April 13	April 13	„ 18	Pneumonia	
E. P.	„ 13	„ 13	„ 15	Cardiac failure	Forceps
E. M'E.	„ 16	„ 16	June 9	Pyæmia	
A. S.	„ 23	„ 24	May 5	Septicæmia	Placenta Prævia
M. W.	„ 27	„ 27	„ 12	„	Secondary *post-partum* hæmorrhage
A. M.	March 16	March 17	„ 23	Pyæmia	
M. M'D.	May 15	May 15	„ 30	Septicæmia	
S. B.	June 23	June 23	July 27	Pyæmia	
E. G.	Oct, 12	Oct. 12	Oct. 20	Septicæmia	Putrid fœtus, 7th month

Table No. VI.—*Application of Forceps.*

Indication	No.	Dead Children	Remarks
Delay in 2nd stage, with danger to mother or child	50	2	
Prolapse of cord -	1	—	
Contracted pelvis -	3	1	One case the forceps slipped and had to be abandoned. Delivery completed by version. Child was dead.
Occipito-posterior -	7	1	
Eclampsia - -	1	—	Os fully dilated. Head low down.
Cardiac and renal disease	2	1	Applied before the first stage had ended.
Early rupture of membrane	1	—	Applied on account of child before the first stage was completed.
Total, - -	65	5	

SUB-TABLE A.—*Showing No. of Pregnancy.*

I.-para	52
II.-para	2
III.-para	3
IV.-para	2
V.-para and over	6
Total	65

SUB-TABLE B.—*Ages of Patients.*

17–25	28
26–30	23
31–35	8
36 and over	6

TABLE NO. VII.—*Placenta Prævia.*

Name	Age and Para	Variety	Period	Result to Child	Presentation	REMARKS
1. I. B.	32, VII.	Marginal	Term	A.	Breech	Bleeding slightly for three days; foot brought down; delivered in 16 hours.
2. A. C.	36, V.	,,	8 months	D.	Head	Sent in bleeding; cord prolapsed. Pulseless version; delivery in 1 hour.
3. B. K.	36, VIII.	Central	Term	D.	,,	Version; delivery in 6 hours.
4. A. S.	30, II.	,,	,,	D.	,,	See "Mortality" Case VII." Plugged outside. Podalic version; in hospital.

Table No. VIII.—*Accidental Hæmorrhage.*

Name	Age and Para	Date	Variety	Treatment	Result to Child	Remarks
1. A. C.	37,VIII.	1903 Nov. 8	External	None	Alive	In good labour.
2. M. F.	42,VIII.	„ 21	„	„	„	In labour; membranes had ruptured.
3. K. M.	29, VI.	Dec. 30 „	„	Plugged and version	Dead	Lost about 1½ pints. No further loss. Patient died.
4. B. G.	35,XIV.	1904 Mar. 22	„	None	„	In labour.
5. M. B.	40, II.	Apl. 26, „	„	Plugged	„	7th month. Plugged before admission. Labour had started.
6. N. C.	29, I.	May 1 „	Mixed	None		Slight external. 1½ lbs. clots after placenta.
7. M. C.	29,VIII.	„ 5	External	„	„	Was in labour.
8. A. W.	23, III.	„ 11	"	Plugged	Alive	Labour followed soon.
9. M. C.	39, XI.	„ 13	„	„	Dead	Hydramnios. Labour followed soon.
10. R. C.	36, VII.	„ 14	„	Version	„	Oblique presentation. Delivery in 2 hours.
11. S. D.	34 XIV.	„ 31	„	None	Alive	Premature. In labour.
12. C. D.	29, VI.	Aug 2	Mixed		„	Slight external. Large clots after placenta.
13. R. L.	27,IX.		External	Plugged	Dead	Delivery in 20 hours

TABLE No. IX.—*Cases of Contracted Pelvis.*

Name	Age	Para	Pelvic Measurements					Mode of Delivery	Result to Child	REMARKS
			C. V.	Trans.	Ext. C.	I.-C.	I.-S.			
M. G.	20	I.	8	13	—	—	—	—	Dead	Symphysiotomy.
M. H.	23	I.	8	13	15	28	24	—	Alive	Cæsarean Section.
H. H.	24	I.	8	13	17	—	24	Forceps	Alive	Coxalgia.
M. M.	32	VII.	9¼	13	—	—	—	Version	Dead	Induced labour.

Table No. X. A.—*Morbidity.*

Temperature	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Total
100.8° to 101.2°	3	4	3	3	5	4	5	6	1	–	1	2	37
101.2° to 102.2°	–	1	4	8	4	4	4	3	5	2	2	1	38
102.2° to 104°	1	1	4	2	10	7	6	5	5	8	5	4	58
104° and above		–	–	–	7	4	3	5	2	4	–	1	26
Total	4	6	11	13	26	19	18	19	13	14	8	8	159
Percentage													8.42

Table No. X. B.

Temperature.	Nov.	Dec	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Total.
99°, P. 90	9	11	18	14	28	19	26	20	19	18	15	10	202
Percentage													10.70

Table X.—C.

Causes of Morbidity other than Uterine.

Breast abscesses	3
„ inflamed	8
Cardiac disease	1
Bronchitis	2
Constipation	12
Eclampsia	5
Influenza	6
Mania	1
Phthisis	1
Pneumonia	1
Pleurisy	1
Renal disease	6
Puerperal ulcer	7
Lacerated vagina	4
Total ...	58

TABLE X.—D.

Day of occurrences	of Temp.	Day of occurrences	of Temp.
1st	26	6th	18
2nd	36	7th	11
3rd	36	8th	14
4th	31	9th	5
5th	26	10th, &c.	2

ART. XXII.—*Large White Kidney.*[a] By GEORGE PEACOCKE, M.D., F.R.C.P.I.; Assistant Physician to the Adelaide Hospital.

ON the 25th of May, 1903, a young man, aged thirty, was admitted to the Adelaide Hospital under my care. He stated that he had been in his usual health up to the previous Christmas, when he caught a severe cold and suffered from pain in his head and back. He continued at his work, that of a carpet layer, until February, when, shortness of breath and swelling of his feet coming on, he sought advice at the Meath Hospital, and was admitted under the care of Sir John Moore. His case was regarded as one of acute nephritis. He improved under treatment, and left the hospital on the 27th of March feeling quite well. Some time about the middle of May he noticed his face, hands and feet were again becoming swollen, and also that his abdomen was increasing in size. From the 25th of this month until his death, on the 25th of September, I had him under my care in hospital. His symptoms during this period were briefly as follows:—He was very anæmic, and universally dropsical. He suffered much from dyspnœa, but there was no discoverable pulmonary or cardiac disease. Diarrhœa, amounting on some days to as many as eight motions, was a constant symptom all through his illness. His urine was scanty, sp. gr. 1,020 or less, loaded with albumen, occasionally contained blood, and the abundant deposit consisted largely of hyaline, granular, epithelial and fatty casts—a typical case clinically of chronic tubal nephritis. At the *post-mortem* the kidneys presented the appearance usually described as large white kidneys. Professor Scott made sections of them, and he handed me the following report:—"The connective tissue capsules of the Malpighian corpuscles are thickened in many cases, and some of the corpuscles are turned into spheres of connective tissue. There are many inflammatory granulomata in the intertubular tissue. The tubes are dilated, and contain albuminous casts."

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[a] Read before the Section of Medicine in the Royal Academy of Medicine in Ireland, on Friday, January 20, 1905.

The second case was that of a young man, aged twenty-four years, a painter by trade. He was admitted to the Adelaide Hospital under my care on the 23rd of March, 1904. About two months before his admission he had noticed his feet and ankles were swollen; previous to this he had enjoyed excellent health. On admission he was found to be very anæmic, and universally dropsical. Like the previous case, he suffered from diarrhœa. He had considerable dyspnœa and cough. His chief complaint was of pain in the right side of his chest, which was evidently pleuritic in origin. His urine was diminished in quantity, sp. gr. 1,015, and contained a large amount of albumen, with numerous hyaline, granular, epithelial and fatty casts. He remained in hospital until his death on the 24th of May. His kidneys on removal had all the macroscopic appearances of the large white kidney, and Professor Scott has kindly furnished me with the following report on the microscopical appearances :—"Although the interstitial connective tissue is decidedly increased, there is less than in the other case, and the inflammatory granuloma is not well marked. About one-third of each Malpighian corpuscle shows amyloid degeneration. Some of the tubes are dilated, but others are packed with epithelial cells in a condition somewhat like cloudy swelling ; in other tubes there is slight fatty degeneration.

The resemblance in the clinical symptoms, and indeed in the macroscopic appearance of the kidneys, in these two cases was very striking, and had investigation not proceeded further the two cases would have been considered similar in every respect, except that in the first case there was a definite and carefully observed attack of acute nephritis, subsequently followed by symptoms pointing to more chronic mischief; while in the second case there was nothing in the history to lead one to suspect that the disease in the kidneys was ever acute, but rather that it was chronic from the beginning. Microscopic investigation, however, revealed the fact that in the first case there was merely evidence of a chronic inflammation of the kidneys, but in the second case there was in addition to some increase in the interstitial connective tissue commencing amyloid degeneration in the Malpighian corpuscles.

I am fully aware that these two cases do not present any features that can be regarded as in any way out of the common, but they exemplify two of the recognised forms of chronic nephritis, a subject which I wish to bring very briefly before this section of the Academy

There is, I think, considerable confusion existing as to the exact condition which is described under the term chronic parenchymatous nephritis. If we look at the ætiology of this subject as given by different writers we will be struck by the varied opinions that are held as to the causation of this form of chronic nephritis. While the majority hold the view that the condition results in most cases from a previous attack of acute nephritis, but is sometimes chronic from the beginning, Rose Bradford maintains that "in a small proportion of cases the symptoms of acute Bright's disease merge into those of the chronic disorder; but it is probable that the great majority of cases of chronic nephritis are really chronic from the beginning, and not the direct sequel of the acute."

I am inclined to hold the view that the disease known as chronic parenchymatous nephritis, the large white kidney of nephritis, is always the result of a previous acute attack, and that these cases described as chronic from the beginning are really examples of some other affection—most commonly, amyloid degeneration.

Tuberculosis, chronic suppuration, and syphilis are mentioned among the recognised causes of chronic parenchymatous nephritis; but these are the very causes that are prone to produce amyloid disease, and that when, as is often the case, some interstitial changes are found in the kidneys, these changes are not primary but are secondary to the amyloid degeneration.

It is a well recognised fact that in many instances the symptoms of chronic nephritis do not supervene immediately after the acute symptoms have subsided, but that often a very considerable interval intervenes, when the patient is apparently in good health, before any symptoms make their appearance. This fact may, I think, be one reason why some cases are regarded as chronic from the beginning—the acute

EXPLANATION OF MICRO-PHOTOGRAPHS.

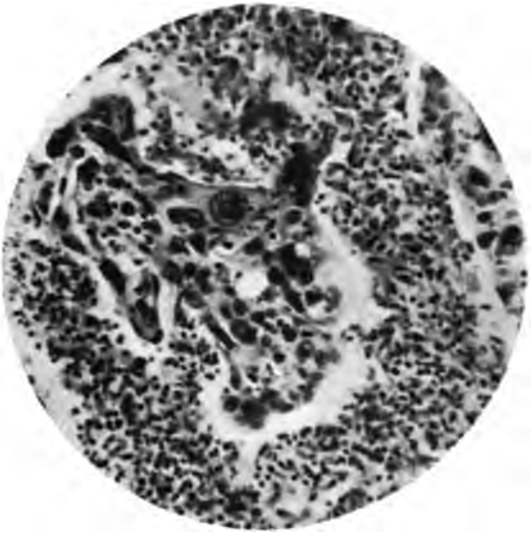
(*Micro-photographs by* DR. WIGHAM *from preparations by* DR. NEVILLE.)

No. 1. (Zeiss' Objective D—Ocular 4).—A markedly atypical squamous cancer of cervix. (Endothelioma?) The epitumoral cells are of very different sizes—some extremely large. Round-celled infiltration.

No. 2. (Zeiss' Objective A—Ocular 4).—An adeno-carcinoma from fundus of same uterus as in No. 1. Here are seen groups of epithelial-lined tubes which have invaded the muscle fibres.

No. 3. Adeno-carcinoma ("cauliflower excrescence") from uterine mucosa.

Nos. 4-8. (Zeiss' Objective A—Ocular 4).—Various types of glandular endometritis. No. 4 Simplest form; slight excess in number of glands. No. 5 and No. 6 More advanced cases. No. 7 Cystic endometritis; here the glands are much dilated, the section appearing like a piece of lacework to the naked eye; note the preservation of typical epithelium. No. 8. A somewhat rare form of hyperplastic glandular endometritis; the gland spaces are dilated and filled by delicate arborescent branchings of the folded epithelium.



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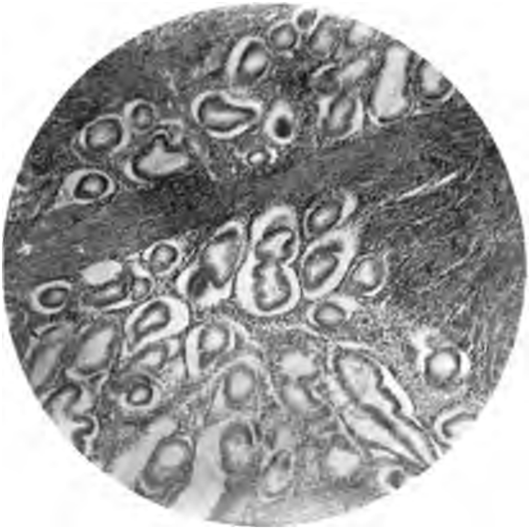

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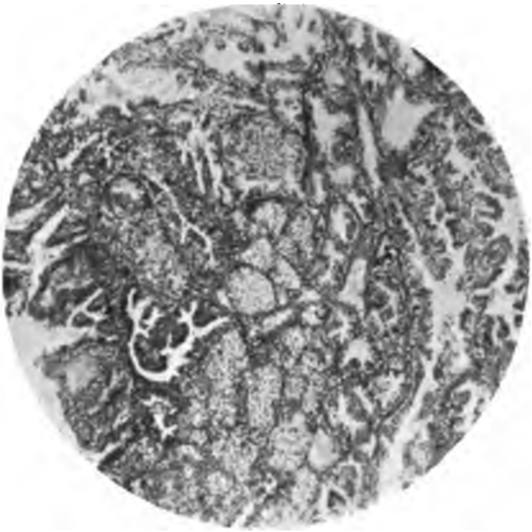

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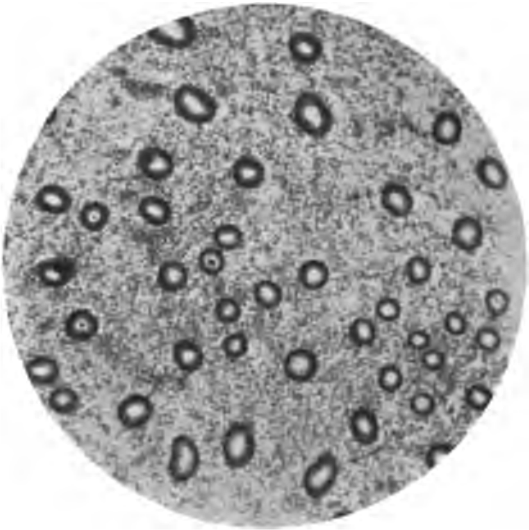

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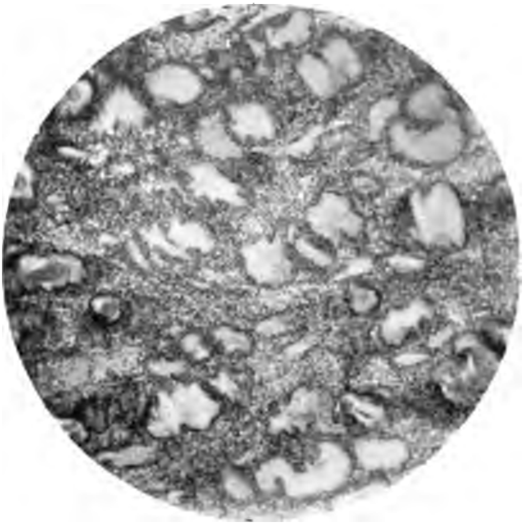

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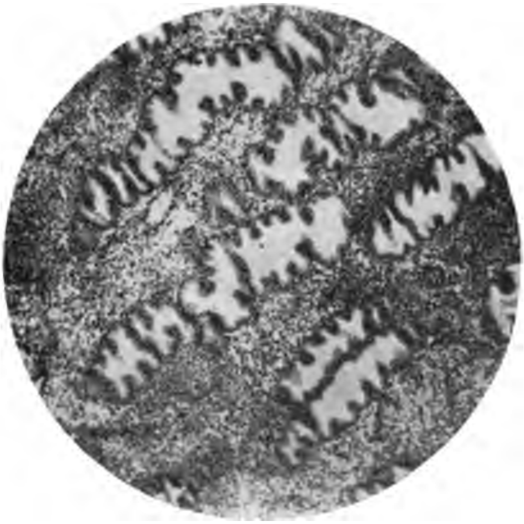

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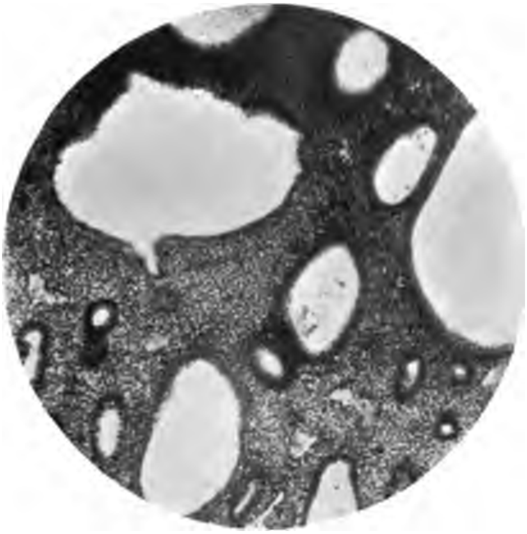

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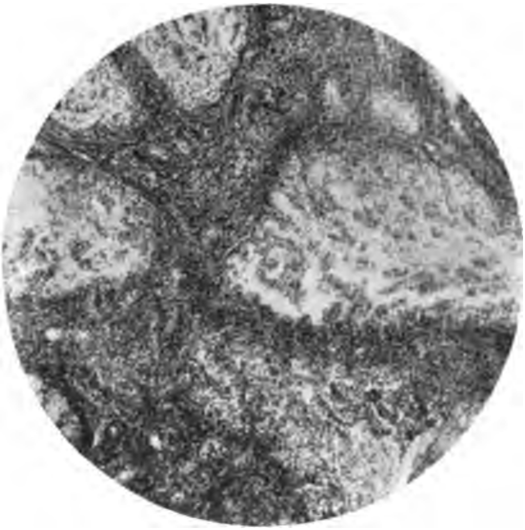

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attack that occurred some time previously having been overlooked. If this view of the ætiology of chronic nephritis be correct the classification of diseases of the kidney associated with albuminuria is somewhat simplified, and the classification I would favour would be briefly as follows:—

1. Nephritis, acute and chronic—the chronic representing the chronic parenchymatous nephritis, or better described, as Dickenson suggests, "the large white kidney of nephritis." The small white kidney is generally considered to be a later state of this form, and I suppose that in some individuals the renal epithelium is not so rapidly and completely destroyed, and that sufficient is left to carry on life until the increasing fibrosis causes shrinking of the kidney substance; but I should imagine that the condition is very rare.
2. Granular kidney, essentially chronic from the beginning, and resulting most frequently from the toxic action of alcohol, gout or lead.
3. The kidney of amyloid disease.

ART. XXIII.—*Two Cases of Cystic Endometritis with remarks on Treatment.*[a] By R. DANCER PUREFOY, M.D., F.R.C.S.I.; Ex-Master, Rotunda Hospital.

ENDOMETRITIS, either alone or as an attendant on, or complication of, some other pathological condition, claims a large share of our attention in nearly every case of uterine disease; and those who have had the widest experience will be the most ready to acknowledge how often our hopes of speedy, or even steady, improvement are disappointed. Whenever we have regard to the complex structure of the endometrium and the periodically recurrent variations in its blood supply, on which its functional activity may be said to depend, we shall feel no surprise in observing how often these variations go wrong in excess or deficiency, and thus induce obstinate structural changes. The precise nature of these changes, the conditions local, constitutional and bactericidal which are potential in causing them, have, as is fitting, engaged the attention of many acute observers with very satisfactory results; but with regard to some forms of endometritis—for instance, that to which I wish to direct your attention in this communication—we must confess their ætiology is still awaiting elucidation.

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[a] Read before the Section of Obstetrics in the Royal Academy of Medicine in Ireland on Friday, February 3, 1905. [For the discussion on this paper see page 299.]

I propose to bring under your notice two cases illustrating the history and course of what has been termed cystic endometritis.

Case I.—Mrs. F., aged 45. In fairly good health at the time of marriage, six years ago; in about seven months afterwards had an early abortion. Some months later, after a long journey, suffered from distressing pruritus vulvæ, which, however, yielded to treatment, In October, 1902, after missing one menstruation, distressing dorsal and abdominal pain was felt, attended with slight intermittent bleeding. Later on the bleeding became continuous, sometimes profuse, and so continued till her admission to the Rotunda in January, 1903. At this time her general condition was such as to warrant the use of medicine, at least for a time, in the hope of arresting the bleeding, and accordingly she was given that most useful uterine hæmostatic, tincture of Indian hemp, in five minim doses, twice daily with excellent effect. This was followed by the administration of the muriate tincture of iron, and in about a fortnight the bleeding had quite ceased. Examined under chloroform, the uterus was found in normal position, the cervix healthy, and the appendages likewise. The cavity measured 3½ inches; viscid, glairy discharge poured from it in a large quantity, and the curette brought away in abundance fragments of greatly thickened endometrium. Subsequently, at intervals of three or four days, she was treated on several occasions with iodine and phenol or pyroligneous acid, and in about three weeks from the date of the curetting she was allowed home apparently in a very satisfactory condition. For some months menstruation was normal, but a return of the bleeding rendered a repetition of the treatment necessary, twice in 1903 and once this year (1904), in the month of September. The tissue removed on each occasion, though much lessened in amount, presented the same microscopic characters.

Case II.—K. C., aged twenty-eight, married two years; one early miscarriage. Admitted August 8, 1903, in a very feeble condition, owing to repeated bleedings; indeed her aspect made me apprehend the presence of malignant disease, When some improvement in her general condition had been effected by rest, feeding and tonics, she was examined and the uterus found to be retroverted and somewhat fixed by numerous adhesions; the appendages were not reached. When dilated and curetted, the amount of pulpy tissue removed was so great that I thought my apprehensions as to the malignant disease were only too well founded, but examination by my much-lamented friend, the late Dr. Neville, showed only the characteristic appearances of cystic endometritis. This woman was re-admitted a few months later, when it was found necessary to repeat the treatment.

The main points in these two interesting cases may be thus summarised:—

1. Both women were married, not advanced in years, and free from other disease.

2. Both had been, at least, once pregnant before the development of this uncommon disease.

3. Bleeding without any considerable pain was the prominent sign in both cases.

4. Recurrence took place at an early date.

5. The microscopic appearances are not like those of malignant disease, especially as regards the epithelium.

It may be urged that more vigorous use of the curette in the first treatment would have prevented recurrence, but, in my opinion, it is better to err in removing too little than to run the risk of rendering the endometrium permanently incapable of fulfilling its highest function by too extensive removal of its glands.

Having regard to the marked tendency to recurrence and the severe bleeding which attend this disease, one feels inclined to describe it as a transitional stage between benign and malignant adenoma.

Though the experience of only two cases is inadequate to warrant positive statements on the matter, I incline to the view that curetting, repeated if necessary, and followed by the application of the caustics commonly in use, will effect a cure.

For the safe and effective use of the latter, I think we are still in want of a safe apparatus. A syringe for intra-uterine injection should be so constructed that the fluid may be measured by drops, and I have not seen one which fulfils this indication. Many years ago Dr. Barnes suggested an apparatus for carrying medicated ointments into the uterine cavity, and recently Dr. Duke has constructed an ingenious appliance by which small quantities of any caustic fluid may be safely diffused in the uterine cavity. For us in Dublin it is, I think, of much interest to recall the fact that a Master of the Rotunda Hospital, Dr. Evory Kennedy, was the first in Europe to devise a syringe for intra-uterine use.

In cystic, as in every other form of endometritis, the first, and perhaps the most important, indication to be fulfilled in treatment is to secure a sufficiently patulous condition of the cervical canal, to admit of free escape of healthy and unhealthy discharges.

As to the choice of caustics, opinions will be found to vary widely. With regard to phenol, it is well to bear in mind the narrowing of the cervical canal, which is very apt to follow its repeated use, unless well diluted. I think glycerine more suitable as a dilutent than spirit or water. In my own practice I have discontinued the application of caustics immediately after curetting, unless in cases of undoubted malignancy.

ART. XXIV.—*The Treatment of Diphtheria.*[a]

By CHARLES HAROLD WALKER M'CULLAGH, M.D., B.Ch., B.A.O. Univ. Dubl., Hillcrest, Roundstone, Co. Galway.

THE treatment of diphtheria may conveniently be divided into prophylactic—with which are associated hygienic measures —calculated to prevent the spread of the existing malady; antitoxin treatment; local and general treatment; as well as treatment of complications which may arise; and, lastly, treatment during convalescence.

In no disease, perhaps, has prophylaxis been placed on a more rational basis or has its triumph been more clearly demonstrated. The case, whether well marked or suspected, should at once be isolated, and all persons who have been exposed to risk of infection should at once receive an injection of antitoxin, which injection may be repeated in a few days; a bacteriological examination of a swab from the throat, not only of the suspected case, but also from all exposed, should be made without delay; and all who have acquired the specific organism should be isolated.

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[a] A Thesis read for the Degree of Doctor of Medicine in the University of Dublin, March 7, 1905.

Antiseptic mouth, nose, and throat washes should also be used by persons exposed, one of the best being a solution of $HgCl_2$—1 in 10,000, or a saturated solution of boric acid. This precaution might well be adopted by all in the vicinity of an outbreak, and, where possible, the immediate removal to an isolation hospital of those who have acquired the disease is a measure to be heartily recommended. It is most important to remember that the bacillus may be retained in the throat for long periods after all local symptoms have disappeared, and isolation should therefore be continued until bacteriological examination shows the absence of the virulent organism.

Hygienic Measures.—The patient should be in a room at the top of the house, from which all curtains, carpets, pictures, and all unnecessary articles are removed. Only special attendants should enter, and these should wear sleeved aprons, to be put on when entering room, and when making applications to the throat they should wear paper respirators, which may be burned after use. Clothes, towels, utensils, &c., should be kept in the room and steeped in boiling disinfectant lotion before removal; discharges and evacuations should be received in earthen vessels containing 1–5,000 perchloride solution; no toys or books should be given which cannot be destroyed; food must not be kept in the room, and any not used should be burned. Such disinfectants as carbolic acid, eucalyptol, and terebene should be diffused from hot water plates, or by means of a spray. After handling a patient, and before leaving the room, the attendant should wash both face and hands in disinfectant solution.

Antitoxin treatment is the treatment *par excellence*; and for the maximum success two rules should be kept in mind. First, inject as early in the course of the disease as possible, and secondly, be guided as to dosage—first, by the severity of the case in hand, and in subsequent injections by the effect produced by the former injection; the best authorities insist on a massive dose to commence with. Of the serum obtained at the Lister Institute from 2,000 to 4,000 units are recommended as an initial dose. The effect is simply magical, the membrane seemingly melting away, swelling diminishing, and fever falling, while the general condition improves rapidly. Cruveilhier strongly advocates intravenous injections, and insists that the curative action is by this method available some hours after the other method would fail; on this assumption one would prefer the intravenous method in very severe or very far-gone cases.

In cases of severe systemic infection associated with the presence of streptococci, antistreptococcic serum has been used with success, but it was not clearly proved that the cases were not cases of diphtheroid throat in which the Klebs-Löffler bacillus was absent.

Peham in some recent experiments on cases of puerperal fever with mixed infection concluded that antistreptococcus serum in these mixed cases had a slight beneficial action, and that even where streptococcus infection was absent the serum proved quite harmless. It would seem well worth a trial in diphtheria with severe streptococcus infection to try injections of antistreptococcus serum alternately with the diphtheria antitoxin, especially in the light of Osler's statement, that the *Streptococcus pyogenes* is a constant attendant of the Klebs-Löffler bacillus in the human body.[a]

Lastly, Robert Hutchison reports four results from intravenous injections of $\frac{1}{2}$–$\frac{5}{6}$ gr. of collargol in 1–200 solution, but experimental evidence is decidedly against this method of medication, and Hutchison himself has abandoned it as irrational.

Local and General Measures.—The local treatment will vary as the disease is limited to the pharynx, or has spread to the nasal or laryngeal membranes. In all we endeavour by sprays, inhalations, insufflations or direct applications to assist to destroy or attenuate the virulence of the specific organism and to prevent the extension of the local process; and should it spread to neighbouring parts, especially in the more septic forms, to allay swelling and the local irritation which, especially in neurotic patients, aggravates so much the general distress.

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[a] Osler. Principles and Practice of Medicine.

In pharyngeal cases direct applications or irrigations are most useful—in either case used hot, as it is well known that the virulence of the specific organism is attenuated by moist heat. $HgCl_2$—1 in 1,000—is much used, or a 1 per cent. solution in alcohol may be applied on wool or sponge three or four times daily, or Löffler's solution—menthol 10 grms. in toluol 36 c.c., liq. ferri perchloridi 4 c.c., alcohol abs. 60 c.c. Salicylic acid—1 in 1,000, chlorine water, saturated boric solution are a few of many applications used, and many testify to the efficacy of insufflations of sublimed sulphur. An alkaline antiseptic spray, such as one of sodium bicarbonate, glycerine of carbolic acid, and water, may be played in front of the mouth, especially in younger patients. Ice compresses applied to the throat are very soothing, but hot fomentations or poultices are preferred by some.

In nasal cases, treatment must be prompt and diligently carried out, as the constitutional symptoms are in these cases often very intense, while, owing to the numerous lymphatics in the nasal mucous membrane, glandular inflammation may be severe and the disease extend to the antrum or conjunctiva. Irrigations with the glycerine and sodium solution should be diligently applied, aided by the spray, or a oro-nasal respirator saturated with eucalyptol, benzol,,toluol, &c. $HgCl_2$—1 in 1,000, and sodium chloride, 3 or 4 per cent., alone or combined, are useful for irrigations. In young children the head should be held forward and the steam directed horizontally backwards into the nasal cavity.

In laryngeal cases a tent should be rigged up so that the air may be saturated with antiseptic vapour from a kettle or Siegel spray. Care must be taken that the child may inhale the warm vapour without being itself overheated; a neglect of this precaution increases the distress and exhaustion. The alkaline sprays are specially useful in loosening the mucus, which, by its presence, narrows and irritates the air passages and affords facility for the spread of infection. With symptoms of dyspnœa an emetic of zinc sulphate or ipecacuanha can be given if the patient is seen early, but if not soon effectual they should not be persisted in, and if the dyspnœa increases operative measures should be at once employed. Temporising is fatal.

Coming to the choice of operations, intubation combined with serum treatment is widely adopted in hospital practice in Europe, and more generally in America, the serum treatment having shortened the time of retention of the tube from about seven to about four days, while risk from persistent swelling or exfoliation of membrane is greatly diminished.

In private practice, however, the balance of opinion favours tracheotomy; emergencies are less likely to arise after it, and in the former operation there is the risk of partial asphyxia during insertion of the tube and of blocking of the trachea from detached membrane.

Intubation is absolutely contra-indicated when there is much œdema of the upper larynx, or where the fauces and nasal passages are severely implicated; in these latter cases it seems established that there is a much increased vulnerability of the tissues which would invite ulceration from an intra-laryngeal tube. Lastly, the probability of membrane low down in the trachea precludes intubation, though this condition is not easily recognised unless casts of the trachea are coughed up. Tracheotomy may be necessary after intubation if the membrane extends, if the tube is repeatedly choked, or where there is great intolerance to its retention.[a] In a small proportion of cases dyspnœa persists after removal of the tube, necessitating re-intubation; this may be due to persistence of membranous swelling in cases in which the exudate is not only on the mucous surface but in the stroma as well; or retention may be due to ulcerations caused by the tube or to paralysis of the vocal cords; or, lastly, œdema of the subglottic mucous membrane beneath the vocal cords may be a cause of trouble.[b]

Passing now to general measures in our treatment, no drug can be called a specific for the disease, and rational treatment aims in assisting the action of the serum by increasing the resisting power of the patient, by reducing fever and antagonising the septic or infective conditions met with in cases where possibly with a feeble constitution the local process is of a septic sloughing type and associated with streptococci. Perchloride of iron is still regarded as a sheet-anchor, 5–20♏. with quinine 1 gr., may be given, every two, three, or four hours, alone or combined with potass. chlor. 1–5 grs. An initial aperient dose of calomel should be given, and repeated with benefit from time to time. Benzoate of sodium is useful both as an antiseptic and for its modifying effect on the secretion. Feeding is important—fluid or semi-fluid food must be given—milk, beaten-up eggs, beef juice, which is invaluable; pounded meat, barley-water, albumen water or soups, should be given at regular intervals, and nutrient enemata if swallowing is painful. Indications of heart failure should be watched for and met with stimulants.

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[a] Biernacki and Muir. See Goodall, Medical Annual. 1905.

[b] P. Watson Williams. Laryngeal Stenosis. Med. Annual. 1905.

Complications.—Of these the most serious is heart failure, which may not appear till well into convalescence. With the serum treatment these cases will be rare—they should be met with stimulants, digitalis, and if necessary hypodermics of ether or caffein. The patient should be kept at rest, and young patients especially guarded against sudden or undue exertion. Strychnin is useful later on. Albuminuria is common, and if in quantity with blood-casts indicates serious nephritis—it must be met by a full purge, milk diet, and the exclusion of chlorides, as far as possible, from food or drink.

Bronchitis may occur; broncho-pneumonia and pulmonary gangrene will need vigorous exhibition of antiseptic inhalations and antiseptic medication, such as quinine or salol, with stimulants.

Extension to the conjunctiva will need strong boric lotions with ice compresses. Diphtheritic otitis media has occurred, requiring puncture of the tympanum with antiseptic treatment of the middle ear. Extension to the antrum of Highmore may demand surgical treatment. Hæmorrhage from local ulceration will be met by styptics applied to the seat of bleeding, such as renoglandin; but Ernest Vieillard points out that epistaxis sometimes occurs before coryza, that this is a grave symptom, and that the earlier it appears the worse the prognosis. Diphtheria of the skin may occur; it may be washed with $HgCl_2$ solution, covered with naphthol; or camphor and cotton wool may be applied with collodion.[a]

Convalescence requires careful watching, as heart failure has occurred as late as six or seven weeks after convalescence is established. Nourishing food should be freely given, with tonics; exercise permitted only gradually, and on the least sign of cardiac failure or distress absolute rest should be ensured, and heart tonics administered.

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[a] Burnev Yeo. Clinical Lectures.

Paralysis may develop, or multiple neuritis, which may be fatal. These complications require rest, with gentle frictions, and later massage, electricity, and strychnin internally, must be persevered with. In very chronic cases injections of strychnin into the muscles has proved most serviceable.

HOW TO KILL A BABY WITH PNEUMONIA.

"Crib in far corner of room with canopy over it. Steam-kettle, gas-stove (leaky tubing), room at 80° F. Many gas-jets burning. Friends in the room, also the pug-dog. Chest tightly enveloped in waistcoat poultice. If child's temperature is 105° make a poultice, thick, hot, and tight. Blanket the windows, shut the doors. If these do not do it, give coal-tar antipyretics and wait."—Dr. W. P. Northrup, in *Edin. Med. Jour.*, Dec., 1904.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

At a Meeting of the College held on May 16th, 1905, the following gentlemen, having passed the requisite examinations, were admitted ordinary Fellows:—John William Crerar, M.B., C.M., Maryport; Robert Douglas Argyll Douglas, M.D., L.R.C.S.E., Edinburgh; William James McCulloch Ettles, M.D., London, E.C.; John Smith Fraser, M.B., Ch.B., Edinburgh; Sidney Gerald Gomes, L.R.C.S.E., Jesselton, British North Borneo; Duncan Gray Newton, M.B., C.M., Brook Hill, Sheffield; Stanley Raw, M.D., Sunderland; Cyrus Retallack, L.R.C.S.E., Edinburgh; Lambert Kenneth Rodriguez, L.R.C.S.E., London, E.C.; Clifford John Taylor, L.S.A., Clifton, Bristol; and John Sandison Yule, M.D., Melbourne.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

TWO BOOKS ON FORENSIC MEDICINE.

1. *A Text-book of Legal Medicine and Toxicology.* Edited by F. PETERSON, M.D., President of the New York State Commission in Lunacy, Clinical Professor of Psychiatry, Columbia University, &c.; and W. S. HAYNES, M.D., Professor of Chemistry, Pharmacy, and Toxicology in Rush Medical College, Chicago, &c. Vol. II. Philadelphia: Saunders & Co. 1904. Pp. 825.
2. *A Text-book of Legal Medicine.* By FRANK W. DRAPER, M.D. (Harv.); Professor of Legal Medicine in Harvard University; Medical Examiner for the County of Suffolk, Mass.; Medico-Legal Pathologist to the Boston City Hospital. Fully illustrated. Philadelphia: Saunders. 1905. Pp. 573.

1. THE first volume of this work was published in 1903, and reviewed in the "Dublin Journal" of the same year. Its contents related to such divisions of Forensic Medicine as do not require laboratory investigation for their elucidation. Volume II. completes the work. It contains articles written by twenty-four American authorities on medico-legal questions. In this way the book comes to contain work by many of the best known American experts, each on his own special subject.

The first part of this volume treats of questions of sex and infancy, such as rape, marriage, infanticide, and similar subjects. Owing to the multiplicity of writers there is sometimes overlapping, and sometimes divergent opinions are expressed—thus, on page 59 cases are mentioned in which labour occurred in women aged seventy, sixty-four, and sixty-three years; on page 64 the statement is quoted—apparently with approval—that women never conceive after fifty-five years of age.

There is an interesting chapter by Dr. Moyer on the "Medico-Legal Relations of the Röntgen Rays"—a subject which, as far as we know, has not yet found a place in any British work on Forensic Medicine. Allusion is made to the use of X-rays in diagnosis and to X-ray burns.

There is a pretty full epitome of the laws of the various American States relating to the insane. This section is not likely to be of much value to medical men practising in Ireland, where procedure is quite different.

Part II. of the volume is on Toxicology: it is exceedingly well written. Many substances which have only been in ordinary use for a comparatively short time have here full attention devoted to them. Thus we find formalin mentioned, and the literature of formalin-poisoning copiously referred to. The account of the symptoms and *post-mortem* appearances is well written. But if one part is to be specially mentioned, we must call attention to the very complete and admirable way in which the various methods for the detection of poisons are presented to us. There are several coloured illustrations of the effects of poisons, borrowed from Hoffmann's Hand-Atlas, and several plates showing colour reactions. Each of the more important poisons is brought more vividly before us by means of notes of several well-chosen cases. There is an important chapter on the means of distinguishing vegetable alkaloids from bodies the result of proteid decomposition. The book ends with a good account of the detection of blood and seminal stains.

We have formed a very high opinion of this volume, and consider that it forms a valuable addition to the literature of Forensic Medicine.

2. Dr. Draper's work treats of the subjects which are usually included in books on Forensic Medicine, with the exception of Toxicology, which the author omits, believing it to be of such importance as to deserve independent treatment by specialists. As the work is primarily intended for students of medicine, we think this omission will seriously lessen its popularity. The average student will hardly be willing to buy a separate book on Toxicology.

This work contains a very fairly full account of its subject. There are a good many instructive illustrations. But the author's style is diffuse and long-winded, so that we have found the book not very easy to read. If conciseness had been made more an object to be attained, and if all the fine writing had been omitted, a much shorter and more useful book would have been the result.

Take the following example, picked out almost at random:—the spectroscopic tests for blood have been alluded to (N.B., they are nowhere described): the author continues—"And now another witness comes into court, claiming ability to declare definitely that the blood in a stain, in a given case, is probably human blood and none other; or if not human that it is from a bird or animal that can be named. This witness is the microscope."

Or the following:—"After death by asphyxia we find the blood fluid, and of a very dark purple colour. Why is it so? It is fluid, because it is charged with retained carbonic acid, which holds the first place among substances preventing coagulation of the blood. The dark colour also is easily explained, and must already be familiar to the reader. The hemoglobin of the red globules is (as has been noted) the carrier of oxygen from the lungs, where it is derived from the air, to the tissues where it is used, &c., &c."

Surely Dr. Draper might have refrained from occupying so much of his printer's paper and of his reader's time.

Dental Surgery. By A. W. BARRETT, M.B. (London), M.R.C.S., L.D.S.E. Fourth Edition. London: H. K. Lewis. 1905. Cr. 8vo. Pp. xii + 159.

WE have had the pleasure of reviewing a former edition of this small work, which has now reached its fourth—a proof of how successful the venture has been. Those for whom the author avowedly caters—medical practitioners too busy for a perusal of more detailed works upon the subject of general Dental Surgery—will here, we believe, find most, if not all, of what they need, and that, too, arranged in a neat, comprehensive, and lucid manner. The value of the work is enhanced by not a few excellent woodcuts and photographic reproductions. Mr. Barrett has certainly managed to touch all the salient points of his subject in a small compass. The size, printing, moderate price, and general get-up of this little manual leave nothing to be desired.

A Short Treatise on Anti-Typhoid Inoculation, containing an Exposition of the Principles of the Method, and a Summary of the Results achieved by its Application. By A. E. WRIGHT, M.D.; Late Professor of Pathology, Army Medical School, Netley; Pathologist to St. Mary's Hospital, London. Westminster: Constable & Co. 1904. Pp. 76.

THIS book contains a full and important account of anti-typhoid inoculation, both from the theoretical and from the practical standpoint. It is doubly important, being written by Dr. Wright, who is also the author of the treatment described therein. Chapter I. treats of the principles of protective inoculation and the physiology of immunisation. The second chapter contains the application of the theory to the production of immunity against typhoid. Dr. Wright prepares the vaccine by subjecting cultures of the typhoid bacillus to the temperature of 60° C., whereby the culture is rendered sterile, and is capable of being injected into the body without producing harmful consequences. Dr. Wright has made several attempts to introduce the vaccine through the stomach, but so far without much practical result; he, however, makes the interesting suggestion that the phenomena of immunisation by acclimatisation so often seen among British troops in India may be the result of the occasional ingestion of typhoid bacilli into the alimentary canal.

In chapter III. the technique of inoculation is described, and the clinical symptoms, the constitutional disturbance with the doses now employed, is slight, and only last 5 or 6 hours.

Chapter IV. contains a large number of statistics, showing the incidence of typhoid and the mortality among the inoculated and those who had not been so treated. These statistics are mostly taken from troops in South Africa or India; but we notice that in an epidemic of typhoid in the Richmond Asylum, Dublin, the percentage incidence of the disease among the inoculated was 1.8, while among the un-inoculated it was 10.0. As regards the duration of protection there is not very much evidence forthcoming; but there are some statistics which tend to show that the effect of the inoculation persists for over two years.

This book should be consulted by all who are working at the subject it treats of.

A Text-Book of Medical Practice for Practitioners and Students. Edited by WILLIAM BAIN, M.D., Durham. With illustrations. London: Longmans, Green & Co. 1904. Pp. 1011.

THIS text-book differs in several respects from the other works on medicine with which we are acquainted. Although it in size very much resembles several works on the same subject which are in ordinary use among students, this book is the product of the work of sixteen writers, to each of whom a subject has been assigned. Dr. Bain acts as general editor, and also has written on the ductless glands and gout. This plan of subdivision, although undoubtedly desirable, and even necessary in large Systems of Medicine, has in smaller works, such as that before us, several disadvantages. The reader becomes unable to form that estimate of the character of the writer which so assists us in reading books written by one man. This is in our opinion the chief disadvantage in books written by many authors; but, in addition, we have various subjects treated from a somewhat different standpoint. A second novelty in Dr. Bain's system is that each section is introduced by a description of the anatomy and histology of the organs in question, written by Dr. Robinson, Professor of Anatomy, King's College, London: and by a second paper on their physiology from the pen of Dr. T. G. Brodie, Professor Superintendent of the Brown Institute. These sections are excellently written and well illustrated, and will remind the student or practitioner of facts sometimes unhappily forgotten.

The sections of medicine proper are written by men, many of whom have a world-wide reputation, and as a rule we have nothing but praise for the manner in which they have each accomplished their task. The only section we have found distinctly poor is that on Diseases of the Alimentary System, by Dr. Sidney Martin; we consider it incomplete and unsatisfactory. Thus, to mention one instance, in the chapter on gall-stones, no mention whatever is made of the cystic duct, much less of any of the phenomena that may result from a stone sticking in it—an omission which renders the section on gall-stones almost useless.

There is a well-written chapter on Skin Diseases, by Dr. Whitfield, containing much of practical importance. The longest and one of the best parts of the work is Dr. Risien Russell's section on diseases of the nervous system; it is full, clear, and satisfactory.

Altogether we are disposed to attribute a high degree of value to Dr. Bain's system of medicine.

An Atlas of Illustrations of Clinical Medicine, Surgery and Pathology. Fasciculus XXI., or XIII. of New Series. Sarcoma Melanodes of Hebra. Plates CXXXV. to CXXXVI. Illustrations of Ringworm, Pityriasis, &c. Plates CXXXVII. to CXLII. London: The New Sydenham Society. 1904. Folio.

THERE are in reality ten plates in the twenty-first Fasciculus of what may well be called "Jonathan Hutchinson's Atlas," for two photographic plates follow the coloured illustrations of Hebra's sarcoma melanodes, which form plates 135 and 136.

The second part of the Fasciculus contains an illustration of a curious bullous eruption from flea-bites to which a fair-complexioned girl, aged three years, was subject. Several of her relatives had suffered in the same way. The girl is now sixteen years of age, and has long ceased to be liable to vesication and any unusual irritation from flea-bites. The second plate shows the appearances in a pronounced case of phtheiriasis pubis (not "phthyriasis," as printed in the text and on the plate). It is open to question whether it was worth while to represent such an affection in a classical Atlas, more particularly as the plate is hardly true to nature, owing to the absence of all traces of irritation of the skin and scrotum apart from patches of discoloration. The remaining plates show pityriasis rosea, tinea tonsurans, and lichen scrophulosorum.

We confess to a feeling of disappointment with this Fasciculus of the New Sydenham Society's Atlas. The drawings are inartistic in certain details, and their subject-matter is questionable in some cases.

At the end of the Fasciculus two folio pages are devoted to correspondence, "Addenda," corrections, and general notes. This should prove a useful feature in subsequent parts of the Atlas.

Nervous and Mental Diseases. By ARCHIBALD CHURCH, M.D., Professor of Nervous and Mental Diseases, &c., in the Northwestern University Medical School, Chicago; and FREDERICK PETERSON, M.D., President of the State Commission in Lunacy, New York, &c., &c. Fourth Edition, thoroughly revised. Philadelphia, &c.: W. B. Saunders & Co. Pp. 922. 338 Illustrations.

A MANUAL for students and general practitioners which has reached its fourth edition may be assumed to have justified its existence, and requires no very lengthy notice. We observe that this really consists of two separate books, each author being responsible for his own share of the work only. This is a pity, as we have no doubt that the two parts would have gained if each had been revised by the author of the other, and the benefit of a *rapprochement* between the artificially separated departments of Nervous and Mental Diseases is one which cannot be too much insisted on. As it is, the binding of two books in one cover does little but increase the size and weight of the volume to an inconvenient degree, the weight being further added to by the use of the abominable glossy "art" paper rendered necessary by the number of half-tone illustrations.

In the division on nervous diseases the place of the usual introductory sketch of nervous anatomy and physiology is taken by a very full and, on the whole, excellent account of the methods to be adopted, and points to be observed, in examining patients. We are inclined to think that this is right. We wonder how many read the anatomical and physiological sections in ordinary text-books of nervous diseases, now that there are so many authoritative separate works on the subject. Parts follow dealing in succession with the Cerebral Meninges and Cranial Nerves, the Brain, the Spinal Meninges and Nerves, and the Cord proper; General Nervous Diseases, Nervous Diseases without known anatomical basis, and Symptomatic Disorders (chiefly neuralgia and insomnia). Nothing of importance is omitted (unless it be thought that drug habits should be dealt with in a work of the kind), and the accounts of the various diseases are sufficiently full, and are well-arranged and quite up-to-date. Thus, as features of the present edition we find notice of the work of Ballance and others on the healing of nerves, and also an account of the curious disorder known as intermittent limping, and of the myoclonic form of epilepsy; while herpes zoster is now included amongst nervous diseases, on the basis of the pathological observations of Head and Campbell and others. The references show a wide acquaintance with the literature of the subject, and, as a whole, the book may be recommended as an excellent treatise of moderate length, written rather from the clinical standpoint.

The division dealing with Mental Diseases is not quite so satisfactory, suffering, as it does, from want of balance in the arrangement. Considering that an attempt is made to cover the subject under eight heads only (those of Mania, Melancholia, Circular Insanity, Epileptic Insanity, Dementia. General Paresis, Paranoia, and Idiocy), we do not see the advantage of devoting so much space to the discussion of the more elaborate classifications. Furthermore, the "Review of Recent Problems of Psychiatry," by Dr. Adolf Meyer, which occupies nearly forty closely-printed pages, and constitutes the feature of the edition in this part of the book, is quite out of place in a short elementary work of the kind. It is far too difficult and advanced for either of the classes of readers for whom the work is intended, although extremely interesting to the mental specialist. Rather too much space is also given to the consideration of "stigmata," and the same want of balance is perceptible in the treatment of the forms of mental disease; but then the section on general treatment is good, the descriptions are well written, and a little more attention to arrangement would have produced a fair short account of the subject.

The book, as a whole, is pleasantly written and readable, and the illustrations well selected and almost invariably well executed.

The Book of Prescriptions (*Beasley*): Containing a Complete List of Prescriptions illustrating the Employment of the Materia Medica in General Use; comprising also Notes on the Pharmacology and Therapeutics of the Principal Drugs and the Doses of their Preparations according to the Imperial and Metric Systems, with an Index of Diseases and Remedies. Rewritten by E. W. LUCAS, F.I.C., F.C.S., Pharmaceutical Chemist; Late Examiner to the Pharmaceutical Society of Great Britain; Author of Practical Pharmacy. With an Introduction by ARTHUR LATHAM, M.A., M.D., F.R.C.P.; Senior Assistant Physician at St. George's Hospital; Assistant Physician at the Brompton Hospital for Consumption. Eighth Edition. London: J. & A. Churchill. 1905. Pp. xvi + 366.

WE are delighted to have the opportunity of welcoming a new and up-to-date issue of our old friend "Beasley" into the field of competition of twentieth-century scientific manuals. In his new court dress, he is thoroughly modern in outward appearance; while his inward contents have been thoroughly tested, illuminated, refiled, and refined. At the same time "the general line which earlier editions have followed have been adhered to"—and wisely, in our opinion: while all the more-important synthetic and other remedies are mentioned, specific examples of prescriptions containing those only which have proved to be of some service are given. The metric equivalents—with conveniently approximate, not exactly absolute, accuracy—are placed side by side with the imperial weights and measures. This is, of course, a great advantage to both student, learner, and mature prescriber—in the present shifting stage of science and law. Dr. Latham tells us in the "Introduction" that the work has been "written to assist the senior student in his work at the hospital." The great disadvantages under which a newly qualified practitioner starts, when unskilled in the art of prescribing—which is so often the case—are deservedly emphasised. And in the present volume the student will find an excellent guiding assistant to help him in that difficult part of his training.

Atlas and Epitome of General Pathologic Histology. By Docent Dr. Hermann Dürck, Munich. Edited by Ludvig Hektoen, M.D., Professor of Pathology in Rush Medical College, Chicago. With 176 Coloured Illustrations on 80 Lithographic Plates and 36 Figures in Black and Colours. London, Philadelphia, and New York: W. B. Saunders & Co. 1904.

The volume before us is to be counted amongst the best of the well-known and greatly-appreciated series of Hand-Atlases published by Lehmann, and given in an English garb by Saunders & Co.

It opens with a good account of circulatory disturbances, and then passes naturally to a consideration of the retrogressive changes. In the section on Embolism a short but interesting narrative is given of the parenchymatous cell emboli, which may occur in the course of various infectious diseases. The different forms of degenerations, pigmentations, and necroses are dealt with on the whole in a very satisfactory fashion. The account given of the diverse conditions grouped as *hyaline degeneration* or *homogenisation*, as the author prefers to call it, is exceedingly good and as clear as is possible to make it with our present knowledge.

The next section, which comprises some 80 pages, gives a lucid exposition of the healing of wounds and of organisation. Owing, however, to the author's view that inflammation merely represents "the symptom of a morbid condition," the account given of the inflammatory phenomena is somewhat disconnected, though otherwise excellent. The author is, like many other pathologists, not enamoured of the term *parenchymatous inflammation*, for he says—"Nowadays pathologists can readily dispense with the conception of parenchymatous inflammation." Previously he very rightly pointed out that, in spite of the clinician's view, "the appearance of albumin or morphologic elements in the urine . . . . does not necessarily imply the slightest trace of inflammatory change."

The suggestion to limit the term *diphtheritic inflammation* exclusively to the processes caused by Löffler's bacillus, and to call similar processes due to other causes *diphtheroid* or *necrotising inflammation* has much to commend it.

In the section dealing with tuberculous inflammation the author speaks of the causal agent as the *tubercle fungus*—a more correct term than *tubercle bacillus.* His classification of tuberculous giant cells is almost Hibernian, as he states there are three kinds, and that the third variety is not a true giant cell formation.

The last 150 pages are taken up with a most full, clear, and excellent description of tumours. It is interesting to note that the author appears to have little sympathy with the theory of their parasitic origin.

The illustrations to the volume—of which there are upwards of 200—cannot be too highly praised. They are for the most part in colours, and are beautiful and accurate reproductions of carefully-selected sections.

The editor (Professor Hektoen) has, on the whole, done his work well. His additions are few but to the point. The couple of sheets from p. 209 appear, however, to have been carelessly read, containing as they do an unusual number of misprints. For example:—*Disaster* (p. 221) instead of *diaster; tortion* (p. 222) instead of *torsion; epitelial* (p. 225) instead of *epithelial; parri passu* (p. 229) instead of *pari passu; cells* (p. 234) instead of *walls; collosal* (p. 235) instead of *colossal; scattering* (p. 238) instead of *scattered; arears* (p. 250) instead of *areas*, &c., &c.

Lateral Curvature of the Spine and Pelvic Deviations. By RICHARD BARWELL, F.R.C.S.; Consulting Surgeon Charing Cross Hospital; Surgeon, Cripple's Home. Sixth Eidtion. London: Baillière, Tindall & Cox. 1905. Pp. xii + 103.

As a rule when a work reaches its sixth edition it is only necessary to mention the fact, but the present *brochure* compels us to make an exception, for it is practically a new work. The ætiology is considerably revised, and special stress is laid upon pelvic deviations as the predominant cause of scoliosis. The natural outcome was to direct the treatment as far as possible to correct the pelvic malposture in its influence in producing deformity in the spine. Toward this the author has expended much time and thought, and we can confidently recommend a careful study of his methods of treatment to all interested in the subject.

Surgical Emergencies. The Surgery of the Abdomen. Part I. Appendicitis and other Diseases about the Appendix. By BAYARD HOLMES, B.S., M.D.; Professor of Surgery in the University of Illinois; Professor of Clinical Surgery in the American Medical Missionary College, Chicago; Attending Surgeon, the Chicago Baptist Hospital. New York: D. Appleton & Co. 1904. Pp. xvii + 350.

THIS volume is the first part of a work on the Surgery of the Abdomen, which, in its turn, is evidently a part of a general treatise on Surgical Emergencies.

The subject of Appendicitis is very fully described in all its bearings, but we cannot say we have discovered in our perusal of it much that is new, yet the author is evidently one who has given much study to the subject. Peritonitis, Intussusception, Perforating Typhoid Ulcer, and Carcinoma of the Intestinal Tract are the subjects to which almost the concluding one hundred pages of the book are devoted. A number of adages complete a small volume, which is certainly worthy of perusal.

Clinical Lectures on Appendicitis, Radical Cure of Inguinal Hernia and Perforating Gastric Ulcer. By G. R. TURNER, F.R.C.S.; Surgeon and Joint Lecturer on Surgery, St. George's Hospital. London: Baillière, Tindall & Cox. 1905. Pp. 136.

ALL these lectures, except the two on Perforating Gastric Ulcer, have appeared in the *Clinical Journal*, consequently we need not comment upon them at any length. The lectures on Appendicitis simply show that Mr. Turner's experiences practically coincide with those of most operating surgeons. So far as the radical cure of inguinal hernia is concerned, every operating surgeon who writes on this subject has his own method of performing the operation or modifying some existing procedure. Mr. Turner gives his method and its results, but for our own part we prefer the Bassini method or some slight modification thereof.

The last two lectures are devoted to perforating gastric ulcer, and the results of surgical treatment are most gratifying. In the last lecture nine cases are reported with but one death, and this occurred in a patient who was almost moribund on admission after a long railway journey. The operating surgeon will read with interest the mode of procedure in the treatment of this serious condition which has been attended with such brilliant results.

A Handbook of Surgery for Students and Practitioners. By FREDERIC RICHARDSON GRIFFITH, M.D.; Surgeon, Bellevue Dispensary; Assistant Surgeon at the New York Polyclinic School and Hospital; Assistant Genito-Urinary Surgeon at the New York Hospital (House of Relief); Past Acting Assistant Surgeon Third Regiment Infantry, N.E.P.; Fellow of the New York Academy of Medicine; Associate-Editor of the *Medical Critic*, &c. With 417 Illustrations. London: W. B. Saunders & Co. 1904. Pp. 579.

IN his short preface the author tells us that the book is intended to serve as a working guide for the student and general practitioner. That he has succeeded in being concise cannot be denied, but the descriptions are so brief as to be utterly useless for either the student or general practitioner. We might recommend it to a nurse just entering upon her professional training, but could not possibly recommend it to those for whom it is intended by the author. In dealing with medico-legal examinations, under the heading of medical jurisprudence, we find the following statement:—"In Great Britain medical practice is divided into that of (*a*) surgeons; (*b*) physicians and apothecaries. Surgeons there are no

M.D.s, and are called Mr.; physicians are M.D.s, and are called Dr." We do not think the reasons for addressing a surgeon as Mr. and a physician as Dr. are quite as Dr. Griffith would have us believe.

The production of books of the type of that before us reminds us of the quotation—

> "'Tis pleasant sure to see one's name in print:
> A book 's a book although there 's nothing in 't."

Diseases of the Liver, Gall-Bladder and Bile Ducts. By H. D. ROLLESTON, M.A., M.D. (Cantab.), F.R.C.P.; Physician to St. George's Hospital, London; formerly Examiner in Medicine in the University of Durham; and Fellow of St. John's College, Cambridge, England. Fully Illustrated. Philadelphia, New York, London: W. B. Saunders & Company. 1905. Roy. 8vo. Pp. x + 794.

THIS portly volume is, in common with others of the now vast series of medical manuals issued by the same publishers, tastefully bound and clearly printed. A considerable number of illustrations—including seven loudly coloured ones—are placed in appropriate positions for the elucidation of the text; but of these appreciation must be expressed in somewhat fainter tones. The author is evidently a master of the literature, as well as of the clinical facts and features, of hepatic disease.

The text is arranged under these three broad headings—"Diseases of the Liver," "Diseases of the Gall-Bladder," and "Diseases of the Bile Ducts." In forming an opinion on the value of a treatise on hepatic ailments, the critic pretty surely turns with special interest to the part which deals with the fertile subject of *cirrhosis*, and he will find it amply dealt with in the volume before us, which it occupies from page 174 to page 335, inclusive. All the classical divisions and subdivisions are tabulated and described. "The author's Anatomical Classification" is based upon the purely structural data offered by "the microscopic appearances." He makes five varieties or types:—(1) Multilobular, (2) Monolobular, (3) Pericellular, (4) Mixed, and (5) Sporadic. The clinical as well as the pathological features of the various types of cirrhosis are described with gratifying lucidity and with conscientious care. Indeed, we have the same remark to make regarding the author's treatment of the manifold subdivisions of this comprehensive treatise. Accordingly, as it would be mere idle pretension to make an appearance of scrutinising the work piecemeal for the public benefit of the reader, we will abruptly close this short notice of a valuable and thoroughly representative volume by recommending to all medical practitioners the perusal of this, the most comprehensive and thoroughly up-to-date text-book on the important subject of hepatic diseases which has yet appeared in the English language.

First Aid to the Injured and Sick. An Advanced Handbook. By F. J. WARWICK, B.A. M.B., Cantab., M.R.C.S., L.S.A.; Associate of King's College, London; Captain, Royal Army Medical Corps (Vol's.) London Companies; Lecturer and Examiner in Ambulance Home Nursing and Hygiene to the Education Department, London County Council; Lecturer on Ambulance to the late School Board for London; Honorary Life Member and late Lecturer and Examiner to the St. John Ambulance Association; and Honorary Divisional Surgeon, St. John Ambulance Brigade; and A. C. TUNSTALL, M.D., F.R.C.S. Ed.; Captain Commanding the Fourth or City of London Volunteer Infantry Brigade Bearer Company; Honorary Associate of the Order of the Hospital of St. John of Jerusalem in England; Honorary Life Member, Lecturer and Examiner of the St. John Ambulance Association; Honorary Divisional Surgeon of the St. John Ambulance Brigade; Surgeon to the French Hospital and to the Children's Home Hospital. Third and Revised Edition. 14th Thousand. Bristol: John Wright & Co. London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd. 1905.

THE public appreciation of the suitability of this neat little manual to its allotted purpose has been fully proved by the extent of its circulation. Well written, well printed, copiously illustrated, fully indexed, and neatly bound: this convenient booklet of xvi + 236 pages is a model of what such volumes should be; and will, we have no doubt, continue to enjoy the popularity which it so well deserves.

An Elementary Treatise on the Light Treatment for Nurses. By JAMES H. SEQUEIRA, M.D. Lond.; M.R.C.P. Lond.; F.R.C.S. Eng.; Physician in Charge of the Skin Department and Lecturer on Dermatology at the London Hospital. London: The Scientific Press, Limited. 1905. 8vo. Pp. 83.

As the reader is informed on the title-page, this booklet is intended for the use of nurses—and other semi-responsible persons—connected with the now broad-cast therapeusis of light. The importance of having all attendants engaged in this pursuit satisfactorily illuminated by scientific light must be so obvious to all as to give a very wide scope of usefulness to Dr. Sequeira's neat little treatise. Long centuries before the undulatory theory of light had been flashed upon the Anglo-Saxon intellect, an English court-physician applied the red-ray treatment of small-pox to royalty—without historic damage to the physical welfare of the latter, and with great benefit to his own reputation. The undulatory theory of light was first placed on a firm basis by another English physician. Its clinical applications, in the light of our present gained knowledge of the manifold mysteries of inanimate nature, should now be widely available without fear of mistakes due to ignorance of physical phenomena and the laws which govern the latter. There are eight very instructive illustrations in this volume. We cordially recommend it to nurses and students.

The Radical Cure of Corns and Bunions. By E. HARDING FREELAND, F.R.C.S. Eng.; Surgeon to St. George's and St. James's Dispensary; Surgical Registrar to the National Orthopædic Hospital. Second Edition. London: John Bale, Son & Danielsson, Ltd. 1905. Pp. vi + 34.

THE corn may, perhaps, be said to dispute with the toothache the supremacy of position as a source of physical and moral torture, inflicted by apparently trivial agency—which is also unaccompanied by any collateral physical debility. The affected area is so comparatively minute, and the obvious structural changes so trifling, as to inspire the derision of the inexperienced, and the critical suspicions of the unsympathetic. Accordingly, it is only those of Mr. Freeland's readers who are possessed of `that dearly-bought first-hand-information on these subjects who can fully recognise the importance of his thesis, and the value of his therapeusis. He gives an excellent account of the pathology and treatment—preventive, palliative, and radical—of those terrible plagues of pedestrian existence, the perusal of which we strongly recommend to all surgical practitioners. Such studies should not be left to the chiropodists.

Walsham's Handbook of Surgical Pathology. For the use of Students in Pathological Museums. Third Edition, Revised and Enlarged. By HERBERT J. PATTERSON, M.A., M.B., B.C. Cantab., F.R.C.S. England; Assistant-Surgeon to the London Temperance Hospital; Surgeon to the Out-patients at the London Lock Hospital. London: Baillière, Tindall & Cox. 1904. Pp. xxii + 529.

THE volume before us, though described as the third edition of Walsham's handbook of Surgical Pathology, is practically a new book; the original idea of the work being, however, closely followed. There is no section of the book we would single out for detailed criticism, but there is an omission to which the reviewer cannot but draw attention. It is that of the absence of any reference to the pathology of the pancreas, a subject which in recent years has so much literature devoted to it. Surely the Museums of St. Bartholomew's Hospital and the Royal College of Surgeons can furnish specimens illustrative of the various pathological conditions met with in this important organ.

The book, however, is one which we can confidently recommend to the student as a guide to the study of surgical morbid anatomy in any manner.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—**Sir Thornley Stoker**, M.D., F.R.C.S.I.
General Secretary—**James Craig**, M.D., F.R.C.P.I.

SECTION OF PATHOLOGY.

President—**H. C. Earl**, M.D., F.R.C.P.I.
Sectional Secretary—**Arthur H. White**, F.R.C.S.I.

Friday, March 17, 1905.

The President in the Chair.

Carcinomata.

Sir Thornley Stoker, President of the Academy, exhibited specimens removed by operation of:—A columnar cell carcinoma of the uterus in a very early stage; and a columnar cell carcinoma of rectum and sigmoid flexure and involving the left ovary.

Dr. W. J. Thompson spoke, and **Sir Thornley Stoker** replied.

Actinomycosis.

Dr. Earl made a communication on cases of human actinomycosis, and showed specimens from a case of actinomycosis of the right kidney with a metastatic abscess in the cerebrum.

Sir Thornley Stoker inquired whether the rarity of cultures was due to the want of a suitable medium.

Dr. Craig was forced, from the number of cases seen by Dr. Earl, to assume that cases of human actinomycosis were commoner than he hitherto imagined.

Mr. Gunn related particulars of cases which he had seen, and also mentioned a case where, owing to the discovery of mycelial threads in the discharge, a mistaken diagnosis of actinomycosis of the rectum was given. Later on it proved to be a carcinoma.

Dr. Kirkpatrick mentioned a somewhat similar case occurring in the lip, where a diagnosis of actinomycosis was at first made, but subsequently this also was shown to be cancer.

Dr. Earl, in reply, stated that many of the peculiar yellow grains were made up of dead organisms, and so cultivations were not easy to obtain. He also considered the increase in the number of cases reported was due to better observation.

Sarcoma of Conjunctiva.

Mr. Arthur Benson and **Dr. Mooney** showed sections of a black tumour, the size of a split pea, removed from the conjunctiva of a married woman, aged forty. It was growing by a rather small pedicle from the conjunctiva of the globe, close to the sclera-corneal margin, at the outer side of the left eye. The woman stated that she first noticed it 11 years ago, as a very small dark reddish spot. For the past five years it had steadily, but very slowly, grown, and some large vessels ran to its base. It was capable of being raised up with the ocular conjunctiva, and was excised with scissors, leaving what appeared to be a perfectly healthy conjunctiva below it. The origin of the growth seems to have been one of those small collections of pigment seen at times in a perfectly healthy conjunctiva. Its extremely slow growth, its low degree of malignancy, and its limitation entirely to the conjunctiva were remarkable.

Dr. Mooney made sections of the tumour, and found that it consisted of two parts, the larger consisting of small spindle-celled pigmented sarcoma, the pigment being abundant, particularly near the periphery and round an excentrically placed non-pigmented area. This non-pigmented area or core, which was placed towards the base of the tumour, was made up of large swollen-looking epithelioid cells, loosely arranged with plentiful intercullular substance. Many of these cells had one or two vacuoles. In none of the sections was this area in touch with the surface of the tumour, and its limits were sharply defined. In bleached sections the structure of the pigmented portion was more easily determined. Mixed with the tumour cells were large epithelioid cells, some having vacuoles, and others deeply staining granules. These large cells were much more numerous where the pigment was most plentiful. Many small empty dilated spaces were scattered throughout the growth, which had very few blood vessels. The conjunctiva covering the tumour was for the most part thickened, and at places cornified.

Gangrenous Intussusception.

Mr. L. G. Gunn showed a beautiful specimen of the above, removed from a child.

Cancer of the Prostate.

Mr. L. G. Gunn showed sections, together with a model, of a cancer of the prostate implicating the wall of the bladder.

SECTION OF SURGERY.

President—Arthur Chance, President, R.C.S.I.
Sectional Secretary—Edward H. Taylor, M.D., F.R.C.S.I.

Friday, March 24, 1905.

The President in the Chair.

Exhibits.

The President exhibited a patient who presented an unusual condition of the hip subsequent to injury.

Mr. Kennedy exhibited—(*a*) a patient operated on for internal strangulation by a band; (*b*) a case after amputation through the shoulder-joint; (*c*) two cases of talipes equino-varus.

Painless Hœmaturia.

Mr. L. G. Gunn read a paper on painless hæmaturia, showing the difficulty in making an accurate diagnosis in these cases, many of which may prove eventually to be of a very serious nature. The author gave a short account of five cases of painless hæmaturia which had passed through his hands during the last few months; all had the common symptom of blood occurring in the urine, but in each case the cause of the hæmorrhage differed, and could not in all probability have been discovered without the use of the investigation and ureteral catheterisation cystoscopes, both of which were demonstrated. The great importance of finding out accurately the functional capacity of both kidneys in cases where it might be advisable to remove one kidney was also discussed, and the method of doing this by means of Prof. Luy's segregator, and the cryoscopic examination of the separate urine was fully explained, and examples given of the value and accuracy of the method, both as regards prognosis and treatment. The cause of the hæmaturia in the first case was believed to be due to an angiomatous condition of the renal papillæ of the left kidney, all the other likely causes of bleeding being excluded one by one, but as the patient refused any operation, the diagnosis was not confirmed as it was in the remaining four cases. The hæmaturia in these cases proved to be from, in No. 2, a severe degree of interstitial change in the left kidney, the right being healthy and secreting, after the removal of the diseased left, from 40 to 50 ozs. of healthy urine during the day. In case 3, a chronic tuberculous ulceration of the bladder was the cause; the floors of several of these ulcers bled when the bladder was gently distended through an irrigation cystoscope. In case 4 the cause was an adenoma of the left kidney, which was removed by operation; while the last case was one of carcinoma of the prostate invading the bladder wall, part of which was successfully removed with the diseased prostate.

Mr. Edward H. Taylor, in congratulating Mr. Gunn on his communication, said that it confirmed his belief in the great value of cystoscopic examination in urinary cases. In the case recently under his care, Mr. Taylor had derived very valuable information concerning obscure bladder symptoms with Mr. Gunn's assistance. Cystoscopy and ureteral catherisation appeared to be methods of investigation requiring such a high degree of technical skill as to belong to the specialist rather than to the general surgeon.

Mr. T. E. Gordon agreed with what had been said by Mr. Taylor. He thought that the methods of examination described by Mr. Gunn were essential in a large proportion of cases, and would in future devolve on specialists.

Mr. G. Jameson Johnston congratulated Mr. Gunn on his contribution to the recent advances in renal surgery, and the manner in which he had worked out his cases.

Purulent Collections.

Mr. Robert Woods read a paper in which he discussed the laws governing the formation of purulent collections, and the way in which those laws affected surgical treatment. In the first place he dealt with soft tissue abscesses; secondly, with those in which one wall of the cavity was fixed; and thirdly, with purulent collections inside fixed walls. From theoretical considerations, he arrived at the conclusion that the correct way in which to treat empyema of the pleuræ was not by dependent drainage and subsequent resection of the chest wall when necessary, but by applying negative pressure to the pleural cavity, and obviating the tendency of the lung to retract. In discussing multiple sinusitis, he mentioned that after performing the radical operation on the antrum of Highmore, according to the Caldwell-Luc method, he had on three occasions grafted the inside of the antrum by Thiersch grafts with good results.

Mr. G. Jameson Johnston disagreed with Mr. Woods regarding the treatment of abscess in the tibia, but he hoped the apparatus devised by Mr. Woods for the treatment of empyema would prove workable, as he considered Estländer's operation a disgrace to medicine. He wished to hear from Mr. Woods if his apparatus could cause expansion of the lung if the pleura had increased considerably in thickness.

Mr. E. H. Bennett, in discussing Mr. Woods' communication, expressed himself opposed to the treatment recommended for empyema. He thought that attempts to exclude air from the pleural cavity by means of plugs would fail, as these could not be borne with comfort.

Mr. Edward H. Taylor considered Mr. Woods' apparatus most ingenious in its construction. He thought that if it were to succeed it would be in empyemata of recent formation, in which extensive pathological changes in the pleura had not yet taken place.

Dr. Travers Smith considered the surgical treatment of empyema most unsatisfactory. He regarded Mr. Woods' idea a most ingenious one, and he was prepared to give his apparatus a trial in the next favourable case which came under his care.

Mr. Blayney thought Mr. Woods' apparatus was not necessary in recent cases, as the lung usually expanded after the evacuation of the pus. For old standing cases he agreed, with others who had spoken, that the apparatus would be useless, but he thought there was a fair field for it in certain cases which came between these—viz., in which the thickening of the pleura was but slight.

Mr. Patrick Dempsey and **Mr. R. A. Stoney** also discussed the communication.

Mr. Woods, in reply, stated that his apparatus was designed, not for localised empyemata, but for the more extensive kind in which the general pleural cavity was involved. He did not consider it would be of any use in those cases in which the pleura was much thickened.

SECTION OF OBSTETRICS.

President—A. J. Smith, M.B., F.R.C.S.I.
Sectional Secretary—T. Henry Wilson, F.R.C.P.I.

Friday, April 7, 1905.

The President in the Chair.

Specimen.

Dr. Jellett showed a Fallopian tube with calcified nodules filling its lumen, the remains of tuberculous infection.

Drs. Rowlette, Tweedy, Purefoy, Professor McWeeney, and the President took part in the discussion, and Dr. Jellett replied.

Ruptured Tubal Pregnancy, with Demonstration of Chorionic Villi.

Professor E. J. McWeeney showed this specimen which had been removed by Mr. Blayney at the Mater Hospital from an unmarried girl, aged twenty-four, who had been suddenly seized with acute abdominal pain and collapse. The abdomen on being opened 24 hours after onset of symptoms was found to contain much blood. The ruptured tube was discovered and removed, whereupon the patient made an uneventful recovery, The sac was about the size of a large hazel-nut, and lay near the uterine end of the tube, which was widely ruptured, and contained a mass of blood-clot to which some whitish shreds adhered. The fœtus was not seen. Microscopic sections showed the shreddy matter to consist of tufts of chorionic villi, some of which were enclosed in a thin epithelium-covered membrane of doubtful nature. The stroma of the villi exhibited marked metachromatism on staining with Ehrlich's hæmatoxylin. It was covered with a double layer of cubical cells (Langhans' cells), on the outside of which were scattered without any regularity large multi-nucleated masses of protoplasm (syncytia). In the intervillous spaces were groups of large mononuclear cells without intercellular substance (trophoblastic cells). The mass of blood-clot contained isolated syncytia in its clefts and also large groups of the trophoblastic elements, lying at a considerable distance from the most deeply penetrating villi. The syncytial cells had not as yet become confluent, and were identical in appearance with the multi-nucleated so-called "foreign-body" giant-cells found wherever intrusive matter was undergoing absorption. Exhibitor suggested that their function was to cause the natural structures to melt away, and thus provide nourishment for the ovum prior to the establishment of vascular connections with the mother. Their nuclei seemed to be proliferating by gemmation, not by mitosis. The mucosa of the Fallopian tube was intact, save at one spot where it was replaced by a fibrinous mass. The delamination of its muscular bundles was apparently being accomplished by swarms of small mononuclear cells resembling lymphocytes. The excellent state of preservation of the structures mentioned was his chief reason for exhibiting the specimen.

DRS. PUREFOY, JELLETT, and the PRESIDENT spoke, and PROFESSOR MCWEENEY replied.

Labour occurring in a Unilateral Synostic (Naegele's) Pelvis.

DR. JELLETT read notes on the above.

DRS. SMYLY, PUREFOY, MOORHEAD spoke, and DR. JELLETT replied.

Report of the Rotunda Hospital for the Year 1903-4.

DR. E. HASTINGS TWEEDY read the above report. [It will be found at page 401.]

The discussion was postponed until the next meeting of the section.

THE RELATIONSHIP BETWEEN DENTAL AND OTHER DISEASES.

IN the *Lancet* of April 15, 1905, R. D. Pedley endeavours to prove that the relationship between dental and other diseases is a very close and intimate one. The defective dentition met with in daily practice and among the poor has the effect, broadly speaking, of lowering the nutrition of the body, and by doing so opening wide channels by which other diseases are only too ready to find their way. Dental disease is the most prevalent of all diseases among civilised communities, and we are as far as ever from touching the cause of this defect. But we have in our own hands the means, not only of alleviating much suffering but, by systematic treatment, improving the health, especially of the young, who are in a way the most important members of the community.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by the EDITOR.

VITAL STATISTICS.

For four weeks ending Saturday, April 22, 1905.

IRELAND.

TWENTY-TWO TOWN DISTRICTS.

THE average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending April 22, 1905, in the Dublin Registration Area and the twenty-one principal provincial Urban Districts of Ireland was 21.0 per 1,000 of their aggregate population, which for the purposes of these returns is estimated at 1,093,959. The deaths registered in each of the four weeks ended Saturday, April 22, and during the whole of that period in the several districts, alphabetically arranged, correspond to the following annual rates per 1,000 :—

TOWNS, &c.	Week ending				Average Rate for 4 weeks	TOWNS, &c.	Week ending				Average Rate for 4 weeks
	April 1	April 8	April 15	April 22			April 1	April 8	April 15	April 22	
22 Town Districts	24.3	21.9	23.3	21.0	22.6	Lisburn -	22.7	31.8	22.7	13.6	22.7
Armagh -	6.9	13.7	13.7	6.9	10.3	Londonderry	23.6	17.4	22.3	19.8	20.8
Ballymena	28.7	9.6	43.1	14.4	23.9	Lurgan -	13.3	17.7	4.4	13.3	12.2
Belfast -	22.1	21.7	26.7	20.9	22.8	Newry -	33.6	21.0	29.4	25.2	27.3
Clonmel -	—	5.1	35.9	25.6	16.7	Newtownards	17.2	28.6	22.9	40.1	27.2
Cork -	34.9	21.9	27.4	21.2	26.3	Portadown	—	15.5	10.3	5.2	7.8
Drogheda -	49.0	24.5	16.3	24.5	28.6	Queenstown	39.6	13.2	19.8	13.2	21.5
Dublin - (Reg. Area)	24.9	25.5	21.6	23.4	23.8	Sligo -	28.8	9.6	14.4	—	13.2
Dundalk -	19.9	4.0	19.9	16.0	15.0	Tralee -	58.1	15.9	10.6	15.9	25.1
Galway -	23.3	15.5	7.8	7.8	13.6	Waterford	17.5	21.4	9.7	15.6	16.1
Kilkenny -	24.6	39.3	24.6	24.6	28.3	Wexford -	28.0	9.3	18.7	23.3	19.8
Limerick -	20.5	15.0	27.3	21.9	21.2						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases, registered in the 22 districts during the week ended Saturday, April 22, 1905, were equal to an annual rate of 1.8 per 1,000, the rates varying from 0.0 in thirteen of the districts to 6.9 in Armagh. Among the 144 deaths from all causes registered in Belfast are 9 from measles, one from scarlet fever, 2 from diphtheria, 3 from enteric fever, and one from diarrhœa; and the 31 deaths from all causes in Cork include 2 from measles and one from diphtheria.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The populution of this area is 378,994, that of the City being 293,385, Rathmines 33,203, Pembroke 26,025, Blackrock 8,759, and Kingstown 17,622.

In the Dublin Registration Area the births registered during the week ended April 22 amounted to 260—131 boys and 129 girls; and the deaths to 179—89 males and 90 females.

DEATHS.

The deaths registered represent an annual rate of mortality of 24.6 in every 1,000 of the population. Omitting the deaths (numbering 9) of persons admitted into public institutions from localities outside the area, the rate was 23.4 per 1,000. During the four weeks ending Saturday, April 22, the death-rate averaged 25.5, and was 4.9 below the mean rate for the corresponding portions of the ten years 1895–1904.

The 179 deaths include 4 from measles, 4 from whooping-cough, one from diphtheria, and 3 from diarrhœal diseases: also 3 from influenza and one death from cerebro-spinal meningitis.

One death was due to lobar pneumonia, 6 deaths were due to broncho-pneumonia, and 3 to *pneumonia* (not defined).

The total deaths (42) from tuberculous disease include 7 from tubercular phthisis, 24 from *phthisis*, 3 from tubercular meningitis, and 8 deaths from other forms of the disease.

One death was attributed to carcinoma, 2 deaths were referred to sarcoma, and one to *cancer* (not defined).

The deaths of 3 infants, born prematurely, were registered.

Diseases of the brain and nervous system accounted for 16 deaths. Of these, 8 were deaths of infants under one year of age from *convulsions*.

Diseases of the heart and blood-vessels caused 23 deaths.

Bronchitis caused 22 deaths.

Four deaths assigned to accidental causes were registered.

In 9 instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These include the deaths of 7 children under one year of age, and the death of a person aged 70 years.

Fifty-three of the persons whose deaths were registered during the week were under 5 years of age (35 being infants under one year, of whom 11 were under one month old), and 49 were aged 60 years and upwards, including 29 persons aged 70 and upwards, of whom 9 were octogenarians, and one (a female) was stated to have been aged 91 years.

The Registrar-General points out that the names of the cause of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

The usual returns of the number of cases of infectious diseases notified under the "Infectious Diseases (Notification) Act, 1899," as set forth in the following table, have been furnished by Sir Charles A. Cameron, C.B., M.D., Medical Superintendent Officer of Health for the City of Dublin; Mr. Fawcett, Executive Sanitary Officer for Rathmines and Rathgar Urban District; Mr. Manly, Executive Sanitary Officer for Pembroke Urban District; Mr. Heron, Executive Sanitary Officer for Blackrock Urban District; Dr. Byrne Power, Medical Superintendent Officer of Health for Kingstown Urban District; and Dr. Whitaker, Medical Superintendent Officer of Health for the City of Belfast.

Table showing the Number of Cases of Infectious Diseases notified in the Dublin Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfast, during the week ended April 22, 1905, and during each of the preceding three weeks. An asterisk (*) denotes that the disease in question is not notifiable in the District.

Cities and Urban Districts	Week ending	Small-pox	Measles	Rubella, or Epidemic Rose Rash	Scarlet Fever	Typhus	Relapsing Fever	Diphtheria	Membranous Croup	Continued Fever	Typhoid or Enteric Fever	Erysipelas	Puerperal Fever	Varicella	Whooping-cough	Cerebro-spinal Meningitis	Total
City of Dublin	April 1	-	*	*	9	-	-	3	-	1	4	14	-	*	*	*	31
	April 8	-	*	*	10	-	-	5	-	6	5	7	-	*	*	*	33
	April 15	-	*	*	1	-	-	2	-	3	4	15	-	*	*	*	25
	April 22	-	*	*	4	1	-	4	-	3	11	6	-	*	*	*	29
Rathmines and Rathgar Urban District	April 1	-	*	*	-	-	-	-	-	-	1	-	-	*	*	*	1
	April 8	-	*	*	1	-	-	1	-	-	1	-	-	*	*	*	3
	April 15	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	April 22	-	*	*	2	-	-	-	-	-	1	-	-	*		*	3
Pembroke Urban District	April 1	-	12	1	-	-	-	-	-	-	-	1	-	*	-	-	14
	April 8	-	8	-	-	-	-	-	-	-	1	-	-	*	-	-	9
	April 15	-	14	-	-	-	-	1	-	-	1	1	-	*	2	-	19
	April 22	-	6	-	-	-	-	-	-	1	-	-	-	*	-	-	7
Blackrock Urban District	April 1	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	April 8	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	April 15	-	*	*	-	-	-	1	-	-	-	-	-	*	*	*	1
	April 22	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
Kingstown Urban District	April 1	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	April 8	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
	April 15	-	*	*	1	-	-	-	-	-	-	-	-	*	*	*	1
	April 22	-	*	*	-	-	-	-	-	-	-	-	-	*	*	*	-
City of Belfast	April 1	-	*	*	8	-	-	3	-	5	11	5	3	*	*	*	35
	April 8	-	*	*	10	-	-	2	2	11	8	6	-	*	*	*	39
	April 15	-	*	*	10	-	-	5	-	7	13	6	1	*	*	*	42
	April 22	-	*	*	7	-	-	4	1	7	9	7	-	*	*	*	35

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

Seven cases of measles were admitted to hospital during the week ended Saturday, April 22, 1905, 12 were discharged, there were 2 deaths, and 45 patients remained under treatment at its close.

Seven cases of scarlet fever were admitted to hospital, 9 were discharged, and 41 cases remained under treatment at the close of the week. This number does not include 24 convalescents from scarlatina who remained under treatment at Beneavin, Glasnevin, the Convalescent Home of Cork Street Fever Hospital, Dublin.

One case of typhus remained under treatment at the close of the week.

One case of diphtheria was admitted to hospital, 3 were discharged, and 8 patients remained under treatment at the close of the week.

Two cases of enteric fever were admitted to hospital, 7 were discharged, and 26 cases remained under treatment in hospital at the close of the week.

In addition to the above-named diseases, 6 cases of pneumonia were admitted to hospital, one was discharged, one died, and 21 cases remained under treatment at the end of the week.

ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, April 22, in 76 large English towns, including London (in which the rate was 14.9), was equal to an average annual death-rate of 15.6 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 17.8 per 1,000, the rate for Glasgow being 18.7, and for Edinburgh 17.2.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ *N., Long.* 6° 15′ *W., for the Month of April,* 1905.

Mean Height of Barometer,	29.811 inches.
Maximal Height of Barometer (22nd, at 9 a.m.),	30.234 ,,
Minimal Height of Barometer (30th, at 9 p.m.),	28.877 ,,
Mean Dry-bulb Temperature,	46.1°.
Mean Wet-bulb Temperature,	43.3°
Mean Dew-point Temperature,	40.1°
Mean Elastic Force (Tension) of Aqueous Vapour,	.251 inch.
Mean Humidity,	80.3 per cent.
Highest Temperature in Shade (on 14th and 27th),	59.1°
Lowest Temperature in Shade (on 8th),	30.0°
Lowest Temperature on Grass (Radiation) (8th),	25.1°
Mean Amount of Cloud,	72.9 per cent.
Rainfall (on 25 days),	2.466 inches.
Greatest Daily Rainfall (on 30th),	.678 inch.
General Directions of Wind,	N.E., E., S.E., W.N.W.

Remarks.

A dull, cold, unsettled and showery month. On the 18th hail, sleet and snow fell heavily, the Dublin and Wicklow Mountains being covered to a considerable depth. The succeeding Eastertide, though occurring late in the month, was very cold. On the 30th a downpour of rain occurred in Dublin in connection with a very deep atmospheric depression. The percentage of cloud at 9 a.m. was 74.7, and at 9 p.m. 71.0, the mean being 72.9. Corresponding to the cloudiness, bright sunshine was sadly deficient, only 107.75 hours against 159 hours in March, and compared with 205 hours in April, 1901, 199.5 hours in 1902, 137.5 hours in 1903, and 175.5 hours in 1904. The daily average duration of sunshine was 3.6 hours.

In Dublin the arithmetical mean temperature (46.8°) was 0.8° below the average (47.6°). The mean dry-bulb readings at 9 a.m. and 9 p.m. were 46.1°. In the forty years ending with 1904, April was coldest in 1879 (the cold year) (M. T. = 44.5°), and warmest in 1893 (M.T. = 51.4°).

The mean height of the barometer was 29.811 inches, or 0.039 inch below the average value for April—namely, 29.850 inches. The mercury rose to 30.234 inches at 9 a.m. of the 22nd, and fell to 28.877 inches at 9 p.m. of the 30th. The observed range of atmospheric pressure was, therefore, 1.357 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 46.1°, or 2.5° above the value for March, 1905. Using the formula, *Mean Temp.* = *Min.* + (*Max.*—*Min.* × .476), the value is 46.5°, or 0.8° below the average mean temperature for April, calculated in the same way, in the thirty years, 1871–1900 inclusive, (47.3°). The arithmetical mean of the maximal and minimal readings was 46.8°, compared with a thirty years' (1871–1900, inclusive) average of 47.6°. On the 14th, and again on the 27th, the thermometer in the screen rose to 59.1°—wind, S. and S.W.; on the 8th the temperature fell to 30.0°—wind, calm. The minimum on the grass was 25.1°, also on the 8th.

The rainfall was 2.466 inches, distributed over 25 days. The average rainfall for April in the thirty-five years, 1866–1900, inclusive, was 1.950 inches, and the average number of rainy days was 15. The rainfall, therefore, was in excess of the average, while the number of rainy days also much exceeded it. In 1877 the rainfall in April was very large—4.707 inches on 21 days. On the other hand, in 1873, only .498 inch was measured on 8 days. In 1903, 1.050 inches fell on 17 days, and in 1904, 1.118 inches on 19 days.

Fog was observed on the 11th only. High winds were noted on as many as 15 days, but reached the force of a gale on the 5th only. Hail fell on the 18th, 19th, 23rd, and 24th; snow and sleet on the 18th. The temperature never rose to 60° in the screen. It failed to reach 50° on seven days. It fell to 30° in the screen on the 8th, and on five nights it fell to or below 32° on the grass. The mean lowest temperature on the grass was 37.3°, compared with 39.1° in 1904, 37.0° in 1903, 36.8° in 1902, 37.3° in 1901, 39.0° in 1900, and only 31.6° in 1887.

The rainfall in Dublin during the four months ending April 30th amounted to 7.844 inches on 71 days, compared with 9.056 inches on 74 days in 1904, 10.176 inches on 78 days in 1903, 7.175 inches on 59 days in 1902, 6.520 inches on 58 days in 1901, 8.002 inches on 79 days in 1900, only 3.203 inches on 46 days in 1891, and a thirty-five years' average of 8.120 inches on 65 days.

At the Normal Climatological Station in Trinity College, Dublin, the observer, Maurice S. Moore, returns the mean height of the barometer as 29.812 inches, the highest reading observed being 30.230 inches at 9 a.m. of the 22nd, the lowest, 28.884 inches at 9 p.m. of the 30th. The mean temperature was 46.3°, the mean dry-bulb reading at 9 a.m. and 9 p.m. being also 46.3°. Rain fell on 26 days to the amount of 2.356 inches, .608 inch being measured on the 30th. The number of hours of bright sunshine registered by the Campbell-Stokes sunshine recorder was 105, giving a daily average of 3.5 hours. The corresponding figures for April, 1904, were 168 hours and 5.6 hours.

Mr. R. Cathcart Dobbs, J.P., reports that at Knockdolian, Greystones, Co. Wicklow, the rainfall amounted to 2.835 inches on 18 days, compared with only .930 inch on 14 days in 1904, 1.165 inches on 9 days in 1903, 3.105 inches on 14 days in 1902, and 2.800 inches on 15 days in 1901. The heaviest fall in 24 hours was .690 inch on the 26th. The total rainfall in 1905, up to April 30th, was 8.495 inches on 59 days, compared with 9.037 inches on 68 days in 1904, 12.385 inches on 63 days in 1903, 9.215 inches on 48 days in 1902, 10.060 inches on 56 days in 1901, 13.191 inches on 70 days in 1900, and only 5.686 inches on 50 days in 1896.

According to Mr. Robert O'Brien Furlong, C.B., at Cloneevin, Killiney, Co. Dublin, 2.67 inches of rain fell on 22 days. The maximal fall in 24 hours was .55 inch on the 26th. Hail or sleet fell on the 17th, 18th, and 23rd. The average rainfall in April of the twenty years, 1885-1904, was 1.774 inches on 14.4 days. Since January 1, 1905, 9.17 inches of rain fell at this station on 69 days, compared with 9.02 inches on 69 days in 1904, 9.67 inches on 76 days in 1903, 8.08 inches on 59 days in 1902, 7.62 inches on 59 days in 1901, and 9.23 inches on 77 days in 1900.

Dr. Arthur S. Goff reports that the rainfall at Lynton, Dundrum, Co. Dublin, was 3.14 inches on 24 days, compared with 1.48 inches on 18 days in 1904, 1.35 inches on 16 days in 1903, 2.63 inches on 16 days in 1902, and 1.19 inches on 12 days in 1901, the greatest daily rainfall being .64 inch on the 30th. The mean shade temperature was 46.4°, compared with 48.3° in 1901, 46.6° in 1902, 45.9° in 1903, and 48.9° in 1904. The thermometric range was from 59° on the 27th to 31° on the 8th. Hail and sleet fell on the 18th.

Mr. T. Bateman, of the Green, Malahide, Co. Dublin, returns the rainfall at 1.773 inches on 22 days, and the shade mean temperature at 44.8°, the extremes being—highest, 60°; lowest, 26°.

In Cork, according to Mr. W. Miller, the rainfall amounted to 3.27 inches on 20 days, .53 inch being measured on the 24th. Since January 1, 1905, 14.95 inches of rain have fallen in Cork on 79 days, against an average for the first four months of the year of 12.78 inches on 68 days.

The Rev. Arthur Wilson, M.A., writes from the Rectory, Dunmanway, Co. Cork, to the effect that 4.55 inches of rain fell there on 24 days, the greatest falls in 24 hours being .71 inch on the 24th, .66 inch on the 14th, and .60 inch on the 29th.

At 21 Leeson Park, Dublin, Dr. Christopher Joynt, F.R.C.P.I., measured 2.790 inches on 23 days, the largest amount recorded in 24 hours being .770 inch on the 30th.

The rainfall recorded by Miss Muriel O'Sullivan at White Cross, Stillorgan, was 3.122 inches on 24 days; the maximum in 24 hours was .730 inch on the 30th.

At the Ordnance Survey Office, Phœnix Park, Dublin, rain fell on 27 days to the amount of 2.290 inches, the greatest measurement in 24 hours being .645 inch on the 30th. The total amount of bright sunshine at this station was 101.1 hours the most in one day being 10.7 hours on the 8th.

Dr. J. Byrne Power, F.R. Met. Soc., Medical Superintendent Officer of Health, Kingstown, Co. Dublin, reports that the mean temperature at that health resort was 46.7°, being 1.5° below the average for the month during the previous 7 years, the extremes were—highest, 58.7° on the 27th; lowest, 31.5° on the 8th. At Bournemouth the mean was 48.7°, the extremes being—highest, 59° on the 25th; lowest, 35° on the 18th and 21st. The daily range of temperature at Kingstown was 10.3°, at Bournemouth it was 12.3°. The relative humidity was 79 per cent., being 3 per cent. above the average for the month during the previous 4 years. The rainfall at Kingstown was 2.44 inches on 20 days, being 0.7 inch above the average for April during 15 years (1873-83) and (1901-04)—0.57 inch was registered on the 26th. At Bournemouth the rainfall was 1.69 inches on 18 days. The total duration of bright sunshine was 106.8 hours as compared with 101.1 hours at the Ordnance Survey Office, Phœnix Park, 75.5 hours at Valentia, 87.8 hours at Parsonstown, 126.6 hours at Southport, 118.8 hours at Hastings, and 106.3 at Bournemouth.

Errata in the Return for March, 1905.

The mean height of the barometer was 29.617 inches, or ·299 inch below the average pressure for the month of March. The foggy days were the 2nd, 3rd, 4th, and 21st. The thirty-five years' average rainfall of the first quarter of the year in Dublin is 6.170—not 6.710—inches. The Trinity College rainfall in March was 2.809 inches, not 2.816 inches.

SERUM THERAPY IN SYPHILIS.

THE new treatment which was tried by Bossi, of the obstetric clinic of Genoa, consists in the use of the serum of mothers who had given birth to syphilitic children. The rationale of this treatment is based on Colles's law, which affirms that a mother who has given birth to a child with hereditary syphilis (of paternal origin) remains free from syphilitic infection. As yet, the results are not sufficiently definite to allow of a positive conclusion, but the author is conducting other experiments on the same line, and calls attention to the new method of treatment, hoping that other observers may be induced to try it. —*New York Medical Journal and Philadelphia Medical Journal,* May 6, 1905.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

"Tabloid" Ferric Chloride and Arsenic.

EACH of these tabloids represents :—Tincture of ferric chloride, min. 10 (0.592 c.c.); arsenious acid, gr. 1/30 (0.0022 gr.). The hæmatinic value of iron is enhanced by the addition of arsenic, which is found to increase the number of red blood cells in anæmic conditions, whilst iron increases chiefly the amount of hæmoglobin in the corpuscle. Arsenic is also a valuable nerve tonic. This preparation has a special value in pernicious anæmia, in leucocythæmia and in nervous diseases. The method of administration may vary. Usually one product is dissolved in a large wine-glassful of water, and swallowed after food. "Tabloid" Ferric Chloride and Arsenic should never be taken undissolved on an empty stomach. It may be swallowed whole, however, if taken with or immediately after food, with a large draught of water. This method obviates risk of injury to the teeth. The tabloids are issued by Messrs. Burroughs, Wellcome & Company, of London, in bottles of 100.

"Pioneer" Milk Sugar.

Cow's milk and human milk contain about the same quantity f fat (or cream). The amount of mineral matter in cow's milk is more than double the amount found in human milk; and lastly, cow's milk contains less milk-sugar and more albuminoids than human milk. In order, therefore, to "humanise" cow's milk and make it fit for infantile digestion it is necessary on the one hand to dilute it with water, so as to reduce the percentage of albuminoids and mineral matter, but on the other hand to add cream and milk sugar in a certain proportion. The milk sugar used in the process should be of the finest quality, as inferior brands are apt to curdle the milk and so upset a child's stomach. The "Pioneer Brand" of milk sugar is intended to meet this requirement. To ensure excellence, Mr. C. G. Moor has been retained by the "Pioneer" Milk-Sugar Company, 24 Minories, London, E.C., to make a systematic examination of every delivery of the product. In order to prepare one quart (which is sufficient for 24 hours' food) of humanised milk, take one pint of fresh cow's milk, one pint of water, four tablespoonfuls of "Pioneer" Milk-Sugar and one tablespoonful of separated or four tablespoonfuls of skimmed cream. Stir the whole well together and warm. It is then ready for use. The proportions of milk and water should be modified according to the age and constitution of the infant. In this way a milk is prepared which is suitable for the most delicate infant, and it contains all the constituents of breast-milk, in their due and proper proportions.

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